



# STIC Search Results Feedback Form

**EIC 3700**

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

John Sims, EIC 3700 Team Leader  
308-4836, CP2-2C08

## Voluntary Results Feedback Form

➤ I am an examiner in Workgroup:  Example: 3730

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

**Comments:**

Drop off or send completed forms to STIC/EIC3700 CP2 2C08



File 155:MEDLINE(R) 1966-2004/Apr W4

File 5:Biosis Previews(R) 1969-2004/Apr W4

File 73:EMBASE 1974-2004/Apr W3

File 34:SciSearch(R) Cited Ref Sci 1990-2004/Apr W4

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

Set Items Description

S1 12 AU='LULLA' OR AU='LULLA A' OR AU='LULLA A.' OR AU='LULLA A-MAR'

S2 64 AU='RAO X' OR AU='RAO X.'

S3 0 S1 AND S2

S4 267129 INHAL?

S5 42632 POLYAMIDE? OR NYLON

S6 0 S1:S2 AND S4

S7 0 S1:S2 AND S5

File 350:Derwent WPIX 1963-2004/UD,UM &amp;UP=200427

File 347:JAPIO Nov 1976-2003/Dec(Updated 040402)

File 371:French Patents 1961-2002/BOPI 200209

File 348:EUROPEAN PATENTS 1978-2004/Apr W02

File 349:PCT FULLTEXT 1979-2002/UB=20040415,UT=20040408

S1 31 AU='LULLA' OR AU='LULLA A' OR AU='LULLA AMAR'

S2 22 AU='RAO X' OR AU='RAO XERXES'

S3 6 S1 AND S2

S4 298357 NYLON OR POLYAMIDE?

S5 0 (S1:S2 AND S4) NOT S3

3/26, TI/3 (Item 1 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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01504995

DEVICE FOR METERED ADMINISTRATION OF MEDICAMENT BY INHALATION

3/7/1 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

014754698 \*\*Image available\*\*

WPI Acc No: 2002-575402/200261

Inhaler for use by asthma patients, has view window provided below  
inhalation nozzle to enable users to ascertain evacuation of medicine  
from cartridge cavity

Patent Assignee: CIPLA LTD (CIPL-N)

Inventor: LULLA A ; RAO X

Number of Countries: 099 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200253216	A2	20020711	WO 2002IN4	A	20020107	200261 B
AU 2002228322	A1	20020716	AU 2002228322	A	20020107	200427

Priority Applications (No Type Date): IN 2001MU22 A 20010108

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200253216 A2 E 15 A61M-015/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR

Serial 10/617850

April 30, 2004

IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW  
 AU 200228322 A1 A61M-015/00 Based on patent WO 200253216  
 Abstract (Basic): WO 200253216 A2

NOVELTY - A circular cartridge having cavities for holding predetermined quantity of medicament, is accommodated in a container (101). The cavities are sealed by pierceable seal. A hollow cylindrical shaft with inhalation nozzle is provided piercing the cavity. A window is provided below the nozzle to enable the user to ascertain the evacuation of medicine from the cavity.

USE - For administering orally metered dose of medicinal composition pierced for use by patients suffering from asthma.

ADVANTAGE - Provides an inhaler containing cartridge loaded with multiple doses of metered medicinal composition. Provides simple and economical construction. Prevents anticlockwise rotation of the cartridge by providing a stopper facing the slope in straight line.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of inhaler.

Container (101)

pp; 15 DwgNo 1/9

Derwent Class: B07; P34

International Patent Class (Main): A61M-015/00

3/7/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

013251359 \*\*Image available\*\*

WPI Acc No: 2000-423242/200036

**Spacer with chamber made of non-metallic anti-static material, useful for medication inhalers**

Patent Assignee: CIPLA LTD (CIPL-N); WAIN C P (WAIN-I)

Inventor: LULLA A ; RAO X

Number of Countries: 082 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200033902	A1	20000615	WO 99GB834	A	19990318	200036 B
AU 9929459	A	20000626	AU 9929459	A	19990318	200045
ZA 9811257	A	20010131	ZA 9811257	A	19981209	200110
EP 1137452	A1	20011004	EP 99910526	A	19990318	200158
			WO 99GB834	A	19990318	

Priority Applications (No Type Date): ZA 9811257 A 19981209

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200033902 A1 E 11 A61M-015/00

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN  
 CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP LS LT  
 LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT  
 UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
 IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 9929459 A A61M-015/00 Based on patent WO 200033902

ZA 9811257 A 13 A61M-000/00

EP 1137452 A1 E A61M-015/00 Based on patent WO 200033902

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI  
 LU MC NL PT SE

Abstract (Basic): WO 200033902 A1

NOVELTY - Spacer with a chamber made of a non-metallic anti-static material, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the

following:

- (a) an inhaler including the above spacer;
- (b) using a spacer as above; and
- (c) administering fine particulate medicament by injecting it into a spacer as above from where it is inhaled.

USE - Spacer for medication inhaler, useful for the oral delivery of, e.g. powdered medicinal compounds.

ADVANTAGE - Polyamide is inherently anti-static. Plastics treated with an anti-static agent do not remain anti-static indefinitely.

DESCRIPTION OF DRAWING(S) - The drawing shows a spacer

Frusto-cones (101, 102)

Inlet (105)

Outlet (106)

pp; 11 DwgNo 2/5

Derwent Class: A96; B07; P34

International Patent Class (Main): A61M-000/00; A61M-015/00

File 111:TGG Natl.Newspaper Index(SM) 1979-2004/Apr 30

File 319:Chem Bus NewsBase 1984-2004/Apr 30

File 19:Chem.Industry Notes 1974-2004/ISS 200417

File 71:ELSEVIER BIOBASE 1994-2004/Apr W3

File 74:Int.Pharm.Abs 1970-2004/Apr B1

File 42:Pharmaceuticl News Idx 1974-2004/Apr W4

File 285:BioBusiness(R) 1985-1998/Aug W1

File 440:Current Contents Search(R) 1990-2004/Apr 30

S1 8676 INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D-  
EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)

S2 41546 POLYAMIDE? ? OR NYLON

S3 2060 ANTISTAT OR ANTISTATIC OR ANTI() (STAT OR STATIC)

S4 122148 SPACER? ? OR CHAMBER? ?

S5 0 S1 AND S2 AND S3 AND S4

S6 0 S1 AND S2 AND S3:S4

S7 1186 S1 AND S4

S8 6 S2:S3 AND S7

S9 3 RD (unique items) [duplicates]

File 155:MEDLINE(R) 1966-2004/Apr W4

File 5:Biosis Previews(R) 1969-2004/Apr W4

File 73:EMBASE 1974-2004/Apr W4

File 34:SciSearch(R) Cited Ref Sci 1990-2004/Apr W4

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

File 144:Pascal 1973-2004/Apr W3

File 6:NTIS 1964-2004/Apr W4

File 8:Ei Compendex(R) 1970-2004/Apr W3

File 94:JICST-EPlus 1985-2004/Apr W2

File 95:TEME-Technology & Management 1989-2004/Apr W2

File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Mar

File 65:Inside Conferences 1993-2004/Apr W4

File 35:Dissertation Abs Online 1861-2004/Apr

S1 103160 POLYAMIDE? ? OR NYLON

S2 3860 ANTISTAT OR ANTISTATIC OR ANTI() (STAT OR STATIC)

S3 19763 INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D-  
EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)

S4 77673 SPACER? ? OR EXPANSION()CHAMBER? ?

S5 0 S1 AND S2 AND S3 AND S4

S6 14 S1:S2 AND S3 AND S4

S7 7 RD (unique items)

S8 7 Sort S7/ALL/PY,A

S9 406246 CHAMBER? ?

S10 0 S1 AND S2 AND S3 AND S9

S11 3 (S1:S2 AND S3 AND S9) NOT S6

S12 3 RD (unique items)

8/6/3 (Item 3 from file: 155)

13586401 PMID: 9272925

Lung delivery of salbutamol by dry powder inhaler (Turbuhaler) and small  
volume antistatic metal spacer (Airomir CFC-free MDI plus NebuChamber).  
Aug 1997

8/7/1 (Item 1 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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09787650 PMID: 8346488

**Improvement in sodium cromoglycate delivery from a spacer device by use of an antistatic lining, immediate inhalation, and avoiding multiple actuations of drug.**

O'Callaghan C; Lynch J; Cant M; Robertson C

Department of Thoracic Medicine, Royal Children's Hospital, Parkville, Melbourne, Australia.

Thorax (ENGLAND) Jun 1993, 48 (6) p603-6, ISSN 0040-6376

Journal Code: 0417353

Comment in Thorax. 1994 Mar;49(3) 289; Comment in PMID 8202891

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

**BACKGROUND**--Aerosols generated from metered dose inhalers may be highly charged. The aim of this study was to determine whether lining the walls of a polycarbonate **spacer** device with an **antistatic agent** would result in an increase in drug output. The effects of multiple actuations of drug into the **spacer** device and increasing residence time of drug within the **spacer** were also determined. **METHODS**--The amount of sodium cromoglycate contained in particles of various size available for inhalation (per 5 mg actuation) from a 750 ml polycarbonate **spacer** was determined by impinger measurement and spectrophotometric assay. **RESULTS**--Lining the **spacer** with an **antistatic agent** increased the mean (SD) amount of sodium cromoglycate in particles < 5 microns available for **inhalation** (per 5 mg actuation) by 244% from (0.59 (0.03) to 1.44 (0.2) mg). When there was a 20 second interval between actuation into the **spacer** device and **inhalation**, sodium cromoglycate available for inhalation in particles < 5 micrograms decreased by 67% (from 0.59 (0.03) mg to 0.2 (0.01) mg). Use of the **spacer** device increased sodium cromoglycate available for inhalation in respirable particles (< 5 microns) by 18% compared with direct delivery by metered dose inhaler. Multiple actuations into the **spacer** decreased the amount of sodium cromoglycate available for inhalation in particles < 5 microns by 31% after two actuations and 56% after three actuations. **CONCLUSIONS**--Multiple actuations of sodium cromoglycate into a **spacer** device before inhalation should be avoided, and inhalation from **spacer** devices should take place immediately after actuation to ensure maximum dose. Lining of a standard **spacer** device with an **antistatic agent** significantly increased output of sodium cromoglycate. This may have implications for improved therapeutic response and drug cost.

Record Date Created: 19930907

Record Date Completed: 19930907

8/7/5 (Item 5 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

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07621948 Genuine Article#: 188LT Number of References: 23

**Title: Washing plastic spacers in household detergent reduces electrostatic charge and greatly improves delivery**

Author(s): Pierart F (REPRINT) ; Wildhaber JH; Vrancken I; Devadason SG; LeSouef PN

Corporate Source: CLIN NOTRE DAME GRACE, SERV PEDIAT, 212 CHAUSSEE

NIVELLES/B-6041 GOSSELIES//BELGIUM/ (REPRINT); PRINCESS MARGARET HOSP CHILDREN, DEPT RESP MED, PERTH MED AEROSOL RES GRP/PERTH/WA/AUSTRALIA/

Journal: EUROPEAN RESPIRATORY JOURNAL, 1999, V13, N3 (MAR), P673-678

ISSN: 0903-1936 Publication date: 19990300

Publisher: MUNKSGAARD INT PUBL LTD, 35 NORRE SOGADE, PO BOX 2148, DK-1016

COPENHAGEN, DENMARK

Language: English Document Type: ARTICLE

Abstract: Ionic detergents reduce electrostatic charge on plastic **spacers**, thereby improving in vitro drug delivery. The aim of this study was to gain practical information on the use of detergents and to evaluate the relevance of this information on *in vivo* drug deposition.

Measurement of electrostatic charge and salbutamol particle size distribution was carried out on detergent-coated and noncoated plastic **spacers**. The efficiency of four household detergents was compared, and the influence of dilution and the duration of the **antistatic** effect were studied. In addition, the level of radiolabelled salbutamol deposition in the lungs of eight healthy adults was compared after inhalation through a new versus a detergent-coated **spacer**.

*In vitro*, all tested detergents reduced the electrostatic charge on the **spacer** surface. This resulted in a mean increase of 37.4% (range 33.5-41.2) in small particle (<6.8  $\mu$ m) salbutamol output compared with water-rinsed/drip-dried **spacers**. Dilution had no influence on the results and the effect lasted for at least four weeks. *In vivo*, the mean lung deposition of radiolabelled salbutamol in healthy subjects was 45.6% (range 43.4-49.5) through a detergent-coated **spacer** compared to 11.5% (range 7.6-17.9) through a static **spacer** ( $p < 0.001$ ).

In conclusion, household detergents offer a simple and practical solution to the problem of static on plastic **spacers** and significantly improve both *in vitro* and *in vivo* delivery of salbutamol.

8/7/6 (Item 6 from file: 144)

DIALOG(R) File 144:Pascal

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15269468 PASCAL No.: 01-0439575

**Carga electrostatica basal en espaciadores plasticos de uso comun con inhaladores de dosis medida**

**(Basal electrostatic charge of plastic spacers devices of common use with metered dose inhalers)**

MALLOL Javier; AGUIRRE Viviana; HERNANDEZ Luis

Departamento de Medicina Respiratoria Infantil, Facultad de Ciencias Medicas, Hospital El Pino, Santiago, Chile; Departamento de Fisica Electrica, Universidad de Santiago de Chile, Santiago, Chile

Journal: Boletin Medico del Hospital Infantil de Mexico : (Ed. espanola), 2001, 58 (4) 229-233

ISSN: 0539-6115 CODEN: BMHIAK Availability: INIST-20051;  
354000097165320020

No. of Refs.: 26 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: Mexico

Language: Spanish Summary Language: English

Introduction. **Spacers** attached to metered dose **inhaler** optimize the administration of aerosol to non-collaborative patients as infants, young children and older persons. All plastic **spacers** exhibit electrostatic charges in their walls, which may results in a significant decrease in the amount of inhaled particles. The purpose of this study was to determine the density of electrostatic charge (DEC) in 4 different types of plastic **spacer** commonly used in our country. Material and methods. Multiple measures were randomly performed to **spacers**, using a high sensitivity electrometer in a Faraday chamber. The **spacers** were made of different types of plastic as polycarbonate, polystyrene, polyethylene and polypropylene. Results. Mean values and standard deviation for DEC were:

Aerochamber (49.87 +- 28.84 nC/m SUP 2 ); Aerocamera Danes (40.49 +- 12.24 nC/m SUP 2 ); Aerofacidose (29.05 +- 4.90 nC/m SUP 2 ); Aerocell, lactantes (29.03 +- 7.98 nC/m SUP 2 ); Volumatic (28.75 +- 7.01 nC/m SUP 2 ); Aerofacidose AE (with **anti - static**, 12.07 +- 1.01 nC/m SUP 2 ); and Nebuchamber (metallic, 2.35 +- 0.20 nC/m SUP 2 ). Conclusions. From all **spacers** studied, the metallic and the **anti - static** added plastic devices showed less DCE.

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8/7/7 (Item 7 from file: 73)

DIALOG(R) File 73:EMBASE

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11925794 EMBASE No: 2003036569

#### Drug delivery

Le Souef P.N.

Prof. Dr. P.N. Le Souef, Department of Paediatrics, University of Western Australia, Crawley, WA 6009 Australia

AUTHOR EMAIL: plesouef@cyllene.uwa.edu.au

Medical Journal of Australia ( MED. J. AUST. ) (Australia) 16 SEP 2002

, 177/6 SUPPL. (S69-S71)

CODEN: MJAUUA ISSN: 0025-729X

DOCUMENT TYPE: Journal ; Conference Paper

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 15

What we know: In preschool children, small-volume **spacers** perform better than large-volume **spacers**. Detergent is the best **antistatic** agent for **spacers**, increasing lung delivery two- to threefold, but it must not be rinsed off. A mouthpiece should be used in children aged 2-3 years or older, as lung delivery is two- to threefold higher for oral inhalation than nasal inhalation (ie, by mask). Inhaled drug doses do not generally need to be reduced in infants and young children owing to inefficiencies of delivery in younger patients. Nebulisers are "dinosaurs" and not needed for most children with asthma. What we need to know: What is the best inhalation technique for **spacers**? How long should children breathe, how many breaths should they take, and at what age should they breath-hold? How should children, parents and doctors be instructed to achieve optimal levels of electrostatic charge reduction for **spacers**? How much should inhaled steroid dose be reduced when a **spacer** is used optimally? What dosing instructions should be given for beta<sub>2</sub>-agonists delivered by **spacer**?

12/7/1 (Item 1 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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14052552 PMID: 9752066

[Inhalation therapy in children younger than two years. I. From theory to practice]

Inhalatietherapie bij kinderen jonger dan 2 jaar. I. Van theorie naar praktijk.

Griffioen R W; de Jongh F H

Emma Kinderziekenhuis AMC, afd. Kinderpulmonologie, Amsterdam.

Nederlands tijdschrift voor geneeskunde (NETHERLANDS) Jun 27 1998, 142 (26) p1484-8, ISSN 0028-2162 Journal Code: 0400770

Comment in Ned Tijdschr Geneeskd. 1998 Oct 3;142(40) 2212-3; author reply 2214-5; Comment in PMID 9864484; Comment in Ned Tijdschr Geneeskd. 1998 Oct 3;142(40):2213-4; author reply 2214-5; Comment in PMID 9864486; Comment



Serial 10/617850

April 30, 2004

in Ned Tijdschr Geneeskd. 1998 Oct 3;142(40):2213; author reply 2214-5;  
Comment in PMID 9864485

Document type: Journal Article; Review; Review, Tutorial ; English  
Abstract

Languages: DUTCH

Main Citation Owner: NLM

Record type: Completed

Effective inhalation of drugs, even by small children under 2 years, is often faster, simpler, cheaper and better with metered dose **inhalers** with small **antistatic** (metal) inhalation **chambers** than with nebulisation. This is also true during considerable bronchial obstruction. It is mandatory that the inhalation **chamber** has a small dead space and well functioning valves opening at low flows. Effective dosing in small children is enhanced by more doses, given separately, while choosing the highest dose per spray available. Important factors determining bronchial deposition in small children are breathing frequency, tidal volume and the degree of bronchial obstruction and nasal obstruction, since inhalation goes primarily through the nose. If well-performed medication with a small inhalation **chamber** is clinically ineffective, it is better to start systemic medication, e.g. a corticosteroid, or even to consider artificial ventilation, rather than to try nebulisation. Better effective deposition is possible with inhalation of drugs in hydrofluoroalkane (HFA) aerosols, which will replace chlorofluorocarbon (CFC) aerosols in the near future. ( 25 Refs.)

Record Date Created: 19981104

Record Date Completed: 19981104

12/7/2 (Item 1 from file: 5)

DIALOG(R)File 5: Biosis Previews(R)

(c) 2004 BIOSIS. All rts. reserv.

0012998305 BIOSIS NO.: 200100170144

**Powder inhaler having capsule holding structure and anti - static walls**

AUTHOR: Calvert John Richard (Reprint); Cook Robert Stanley; Hobbs Michael

Anthony; Leighton Ann-Marie; Simpkin Gordon Thomas; Trunley Roy; West

Anthony Douglas

AUTHOR ADDRESS: Dagenham, UK\*\*UK

JOURNAL: Official Gazette of the United States Patent and Trademark Office

Patents 1236 (4): July 25, 2000 2000

MEDIUM: e-file

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: An **inhaler** for inhaling pulverulent medicament from within a capsule comprises a **chamber** 24 within which the capsule is free to rotate while having its longitudinal axis in the median plane of the **chamber** and thus generally parallel to the front and rear walls 30 and 31 of the **chamber**, by virtue of the fact that the spacing between said front and rear walls is less than the axial length of the capsule but just greater than the diameter of the capsule. The device includes pins 21 serving as opening means to pierce the ends of the capsule while it is seated in a recess 25, whereupon the retraction of the pins 21 allows the capsule to be entrained into swirling airflow in the **chamber** 24 during inhalation of air through air inlets 26 and out through a mouthpiece nozzle 27.

File 158:DIOGENES(R) 1976-2004/Apr W4  
File 174:Pharm-line(R) 1978-2002/Dec W3  
File 129:PHIND(Archival) 1980-2004/Apr W4  
File 781:ProQuest Newsstand 1998-2004/Apr 29  
File 619:Asia Intelligence Wire 1995-2004/Apr 29  
Set Items Description  
S1 6846 INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D-  
EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)  
S2 16125 POLYAMIDE? ? OR NYLON  
S3 594 ANTISTAT OR ANTISTATIC OR ANTI() (STAT OR STATIC)  
S4 304440 SPACER? ? OR CHAMBER? ?  
S5 0 S1(S) S2(S) S3(S) S4  
S6 0 S2(S) S3(S) S4  
S7 0 S1(S) S4(S) S2:S3  
S8 0 S1/TI,DE AND S4(S) S2:S3

File 9:Business & Industry(R) Jul/1994-2004/Apr 28  
File 16:Gale Group PROMT(R) 1990-2004/Apr 29  
File 160:Gale Group PROMT(R) 1972-1989  
File 148:Gale Group Trade & Industry DB 1976-2004/Apr 29  
File 47:Gale Group Magazine DB(TM) 1959-2004/Apr 29  
File 621:Gale Group New Prod.Annou.(R) 1985-2004/Apr 28  
File 649:Gale Group Newswire ASAP(TM) 2004/Apr 28  
File 149:TGG Health&Wellness DB(SM) 1976-2004/Apr W3  
File 441:ESPICOM Pharm&Med DEVICE NEWS 2004/Apr W4  
File 636:Gale Group Newsletter DB(TM) 1987-2004/Apr 29  
File 369:New Scientist 1994-2004/Apr W3  
File 370:Science 1996-1999/Jul W3  
File 20:Dialog Global Reporter 1997-2004/Apr 29

Set Items Description  
S1 105566 POLYAMIDE? ? OR NYLON  
S2 9160 ANTISTAT OR ANTISTATIC OR ANTI() (STAT OR STATIC)  
S3 18702 INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D-  
EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)  
S4 9699 SPACER? ? OR EXPANSION()CHAMBER? ?  
S5 738021 CHAMBER? ?  
S6 0 S1(S) S2(S) S3(S) S4  
S7 0 S1(S) S2(S) S3(S) S5  
S8 1 S1:S2(S) S3(S) S4:S5

8/3,AB,K/1 (Item 1 from file: 149)  
DIALOG(R)File 149:TGG Health&Wellness DB(SM)  
(c) 2004 The Gale Group. All rts. reserv.  
01716931 SUPPLIER NUMBER: 19388600 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Spacer devices in the treatment of asthma: amount of drug delivered to the  
patient can vary greatly.(Editorial)**  
O'Callaghan, Christopher; Barry, Peter  
British Medical Journal, v314, n7087, p1061(2)  
April 12, 1997  
DOCUMENT TYPE: Editorial PUBLICATION FORMAT: Magazine/Journal ISSN:  
0959-8146 LANGUAGE: English RECORD TYPE: Fulltext; Abstract  
TARGET AUDIENCE: Professional  
WORD COUNT: 1564 LINE COUNT: 00131  
ABSTRACT: Anti-asthma drug delivery via **spacer** devices may not be uniform  
enough. Dosage may vary depending on device size, delay between actuation  
of the spacer and time of inhalation, and how often the pump was activated.

Although its user-friendly convenience has increased the popularity of spacers, doses may also vary for different types of drugs. Patients should avoid actuation delays, use single actuations only, and prevent static build-up of the spacer.

... is ready and the spacer in place.

Static electricity accumulates on many polycarbonate and plastic **spacers**, attracting drug particles, which become charged when they are produced by the metered dose **inhaler**. Highly charged **spacers** deliver less drug than those with an **antistatic** lining.(4 13) A simple way of reducing any charge on a **spacer** is to wash it,(14) which has a similar effect on drug delivery as **anti - static** paint,(4 8) but the charge may reaccumulate. **Spacers** made of antistatic materials or metals may reduce this problem.(15) If a patient or general practitioner carries a new plastic **spacer** for occasional use, it should be regularly washed to reduce the charge...

Serial 10/617850

April 30, 2004

File 155:MEDLINE(R) 1966-2004/Apr W4  
 File 5:Biosis Previews(R) 1969-2004/Apr W4  
 File 73:EMBASE 1974-2004/Apr W4  
 File 34:SciSearch(R) Cited Ref Sci 1990-2004/Apr W4  
 File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
 File 144:Pascal 1973-2004/Apr W3  
 File 2:INSPEC 1969-2004/Apr W3  
 File 6:NTIS 1964-2004/Apr W4  
 File 8:Ei Compendex(R) 1970-2004/Apr W3  
 File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Mar  
 File 65:Inside Conferences 1993-2004/Apr W4  
 File 94:JICST-EPlus 1985-2004/Apr W2  
 File 95:TEME-Technology & Management 1989-2004/Apr W2  
 File 35:Dissertation Abs Online 1861-2004/Apr  
 File 319:Chem Bus NewsBase 1984-2004/Apr 30  
 File 111:TGG Natl.Newspaper Index(SM) 1979-2004/Apr 30  
 File 71:ELSEVIER BIOBASE 1994-2004/Apr W3  
 File 42:Pharmaceuticl News Idx 1974-2004/Apr W4  
 File 440:Current Contents Search(R) 1990-2004/Apr 30  
 File 74:Int.Pharm.Abs 1970-2004/Apr B1  
 File 285:BioBusiness(R) 1985-1998/Aug W1

Set	Items	Description
S1	28115	INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D- EVIC? ? OR INSTRUMENT? ? OR PRODUCT? ?)
S2	662448	SPACER? ? OR CHAMBER? ?
S3	641178	BUILDUP? ? OR BUILD()UP? ? OR DEPOSIT? ?
S4	141351	POLYAMIDE? ? OR NYLON OR POLYMER??() (AMIDE OR AMIDES)
S5	84	S1 AND S2 AND S3
S6	0	S4 AND S5
S7	0	S1 AND S2 AND S4
S8	9	S1 AND S4
S9	5	RD (unique items)
S10	4	S9/2001:2004
S11	1	S9 NOT S10
S12	2298	PREVENT?(2W)S3
S13	5	S12 AND S4
S14	5	S13 NOT S8
S15	5	RD (unique items)
S16	866	S3 AND S4
S17	22	S2 AND S16
S18	22	S17 NOT (S8 OR S13)
S19	15	RD (unique items)
S20	4	S19/2001:2004
S21	2	S19/2000 [not relevant]
S22	9	S19 NOT S20:S21
S23	9	Sort S22/ALL/PY,A
S24	2138	S2 AND S4

11/7,K/1 (Item 1 from file: 319)

DIALOG(R) File 319:Chem Bus NewsBase

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00630719

**Plastics spawn new design opportunities in medical.**

Modern Plastics International v 29 n 8 p 31-32

DATE: Aug 1999

CODEN: QQQQQQ DOCUMENT TYPE: Journal (overview 900+ words) ISSN:

Serial 10/617850

April 30, 2004

0026-8283

LANGUAGE: English

ABSTRACT: Plastics materials being used in new applications in the medical field are investigated. These include Eastar glycol modified copolyester from Eastman Chemical of Kingsport, TX, US in thermoformed trays for surgical systems; ABS and polycarbonate supplied by Bayer Corp of Pittsburgh, PA, US in the new Spiros asthma **inhaler** developed by Dura Pharmaceuticals of San Diego, CA, US; K-Resin from Phillips Chemical Co of Bartlesville, OK, US in an oral suction device developed by Yankauer; and Calibre MagaRed 2091 gamma-stable PC and Styron PS from Dow Plastics of Midland, MI, US are being used by General Surgical Instruments in its new Spacekeeper Direct used for vein harvesting in coronary artery bypass grafting. A new acrylic/PC alloy (Cyrex grade 200-8005) has been developed by Cyro Industries of Rockaway, NJ, US that is resistant to lipids and alcohol, is easily processable and offers excellent whiteness. A **non-collapse, cross-linkable elastomer nylon** has been developed by Foster Corp for use in catheters, valves and shrink tubing. PVC tubing is being replace the thermoplastic polyurethanes, such as XUS63153 from Dow, in tubing and other applications

15/7,K/5 (Item 2 from file: 319)

DIALOG(R) File 319:Chem Bus NewsBase

(c) 2004 Elsevier Eng. Info. Inc. All rts. reserv.

00188500

**Triax used in thermal imager.**

Reinforced Plastics (London) v 34 n 12 p 2

DATE: 1 Dec 1990

CODEN: RPLAA9 DOCUMENT TYPE: Journal (word count 200-899) ISSN:

0034-3617

LANGUAGE: English

ABSTRACT: A thermal imager by Osprey Electronics uses a carbon fibre reinforced grade of Monsanto's Triax alloy in the instrument housing. Triax 1180 is a **nylon /acrylonitrile butadiene styrene** alloy, reinforced with Courtaulds' Grafil XA-S carbon fibre, which gives the mechanical strength required and its electrical conductivity **prevents a static build up**.

23/6/2 (Item 2 from file: 2)

01143373 INSPEC Abstract Number: B78006142

**Title: Measurement of charging tendency of pellets by impact charging**

Publication Date: Oct. 1977

23/6/7 (Item 7 from file: 73)

04340850 EMBASE No: 1990228913

**Experimental determination of wall correction factors. Part I:  
Cylindrical ionisation chambers**

1990

23/7/4 (Item 4 from file: 73)

DIALOG(R) File 73:EMBASE

(c) 2004 Elsevier Science B.V. All rts. reserv.

02457231 EMBASE No: 1983110242

**The influence of air humidity on gamma-ray calibration and neutron  
absorbed-dose measurements with different types of A-150 plastic  
tissue-equivalent ionisation chambers**

Mijnheer B.J.; Van Wijk P.C.; Williams J.R.; Bell K.

Radiother. Dep., Antoni van Leeuwenhoek Hosp., Neth. Cancer Inst., 1066

CX Amsterdam Netherlands

Physics in Medicine and Biology ( PHYS. MED. BIOL. ) (United Kingdom)

1983, 28/3 (277-284)

CODEN: PHMBA

DOCUMENT TYPE: Journal

LANGUAGE: ENGLISH

For all A-150 plastic TE ionisation chamber no significant problems are introduced due to the absorption of water into the A-150 electrodes. The small humidity changes in the air-conditioned environments where these chambers are normally employed, coupled with the slow rate of change of water loss or gain, does not lead to any major problems when using A-150 plastic chambers either in photon or neutron dosimetry. Only when the chambers are kept for several days in air with a high relative humidity, variations in weight and size up to several per cent can be caused by water absorption. The observed changes under these circumstances are about twice as high for FWT chamber compared to the Exradin chamber, both for the changes in weight and for the changes in photon calibration factor. Because almost identical changes are observed (even under high humidity conditions) in the photon calibration as in the neutron beam measurement, no significant changes in total absorbed dose determinations in the neutron beam could be demonstrated. The different hygroscopic properties of A-150 plastic employed for the construction of FWT and Exradin TE ionisation chambers and build-up caps, can therefore not explain the observed difference in absolute absorbed dose values between these two chamber types. Both effects might, however, be caused by different procedures applied by both firms to remove the plasticiser from the nylon used for the fabrication of the A-150 plastic. If it is the nylon used in A-150 plastic that produces the hygroscopic effects it is not surprising that the Baldwin-Farmer chamber with a nylon cap should exhibit a much larger effect and these experiments have demonstrated that any problems which might arise due to the hygroscopic nature of A-150 plastic will be less than are experienced with nylon-walled chambers.

23/7/9 (Item 9 from file: 94)

DIALOG(R)File 94:JICST-EPlus

(c)2004 Japan Science and Tech Corp(JST). All rts. reserv.

04339807 JICST ACCESSION NUMBER: 99A0936875 FILE SEGMENT: JICST-E

**Absorbed Dose Conversion Factors of Several Ionization Chambers to Determine Absorbed Dose by the Use of Acrylic Plastic Phantom for High Energy X-rays.**

ENOKIDO YOSHIHIRO (1); MIZUNO HIDEYUKI (1); WATANABE YOSHIYA (1); SATO KYOJI (1); NAKAMURA YUZURU (1); SAKURA MIZUYOSHI (1)

(1) Saitama Cancer Center

Hoshasen Igaku Butsuri (Japanese Journal of Medical Physics), 1999,

VOL.19, NO.2, PAGE.90-98, FIG.1, TBL.6, REF.8

JOURNAL NUMBER: X0867ABD ISSN NO: 0918-8010

UNIVERSAL DECIMAL CLASSIFICATION: 539.16.08 616-085.849

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

**ABSTRACT:** Absorbed dose conversion factors, (C.LAMBDA.)acryl of 8 types of commercially available cylindrical ionization chambers were calculated for conditions using an acrylic plastic phantom and high energy X-rays of 4MV, 6MV, 10MV and 15MV and 60Co .GAMMA. rays. The calculations were according to a Japan Association of Radiological

Physicists(JARP) protocol (1986). In comparison with the (C.LAMBDA.)acryl for the JARP ionization **chamber** (C-110) having a wall and **build - up** cap of acrylic plastic, the difference for the other 7 ionization **chambers** is small, being from -1.1% to +0.4%. Among them, the (C.LAMBDA.)acryl for the NE 2581 **chamber** with a wall of A-150 plastic and Lucentine **build - up** cap is the most different value of about -1.1% and that for the NE 2505/3B **chamber** with a wall of **nylon** and acrylic **build - up** cap is the second most different value of about -0.7%. With a wall and **build - up** cap of the same acrylic plastic, the difference between PTW 30001 and PTW 23333 **chambers** is very small, being within  $\pm 0.1\%$ . In order to compare the absorbed dose given according to the absorbed dose conversion factors calculated, twin ionization **chambers** were installed in the acrylic plastic intercomparison phantom for each exposure and 5 types, the PTW 30001, JARP C-110, PTW 23333, NE 2571 and NE 2581 **chambers** were used for 4MV and 10MV X-rays. The measured absorbed doses for these ionization **chambers** show good agreement within  $\pm 0.35\%$ , although the difference in the measured doses between PTW 30001 and 4 **chambers** increases from -0.44% to +0.71%. (author abst.)

File 98:General Sci Abs/Full-Text 1984-2004/Apr  
File 9:Business & Industry(R) Jul/1994-2004/Apr 29  
File 16:Gale Group PROMT(R) 1990-2004/Apr 30  
File 160:Gale Group PROMT(R) 1972-1989  
File 148:Gale Group Trade & Industry DB 1976-2004/Apr 30  
File 47:Gale Group Magazine DB(TM) 1959-2004/Apr 30  
File 621:Gale Group New Prod. Annou. (R) 1985-2004/Apr 29  
File 149:TGG Health&Wellness DB(SM) 1976-2004/Apr W3  
File 636:Gale Group Newsletter DB(TM) 1987-2004/Apr 30  
File 441:ESPICOM Pharm&Med DEVICE NEWS 2004/Apr W4  
File 369:New Scientist 1994-2004/Apr W4  
File 370:Science 1996-1999/Jul W3  
File 20:Dialog Global Reporter 1997-2004/Apr 30  
File 158:DIOGENES(R) 1976-2004/Apr W4  
File 174:Pharm-line(R) 1978-2002/Dec W3  
File 129:PHIND(Archival) 1980-2004/Apr W4  
File 781:ProQuest Newsstand 1998-2004/Apr 30  
File 619:Asia Intelligence Wire 1995-2004/Apr 29

Set	Items	Description
S1	24817	INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D- EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)
S2	1029979	SPACER? ? OR CHAMBER? ?
S3	1458546	BUILDUP? ? OR BUILD()UP? ? OR DEPOSIT? ?
S4	120242	POLYAMIDE? ? OR NYLON OR POLYMER??() (AMIDE OR AMIDES)
S5	0	S1(S) S2(S) S4
S6	6	S1(S) S4
S7	5	RD (unique items)
S8	7192	PREVENT? (2W) S3
S9	4463296	MEDICAL
S10	429425	MEDICATION? OR MEDICAMENT? ?
S11	1449788	SURGERY OR SURGICAL
S12	41	S4(S) S8
S13	0	S12(S) S9
S14	0	S12(S) S10
S15	0	S12(S) S11
S16	41	S12 NOT S6
S17	33	RD (unique items)
S18	3	S17/2001
S19	2	S17/2002
S20	2	S17/2003
S21	0	S17/2004
S22	2	S17/2000 [too recent]
S23	24	S17 NOT S18:S22
S24	24	Sort S23/ALL/PD,A
S25	2631	PC=2821940
S26	10155	NYLON/DE OR PC=(307172 OR 2891456 OR 2821940 OR 28241)
S27	99	S1:S2 AND S26
S28	6	S1 AND S6
S29	0	S28 NOT (S6 OR S12)
S30	5	S28 AND S9:S11
S31	0	S30 NOT (S6 OR S12)

7/3,AB,K/1 (Item 1 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.  
10527965 SUPPLIER NUMBER: 21210187 (USE FORMAT 7 OR 9 FOR FULL TEXT)



Serial 10/617850

April 30, 2004

**Triple-layer barrier pack protects drug from light. (Nephron Pharmaceuticals)**

Packaging Digest, v35, n10, p115(1)

Sept, 1998

ISSN: 0030-9117      LANGUAGE: English      RECORD TYPE: Fulltext; Abstract

WORD COUNT: 563      LINE COUNT: 00047

ABSTRACT: Nephron Pharmaceuticals uses a foil-based pack for its albuterol sulfate inhalation product. Nephron Pres Steve Simmons says that the albuterol sulfate deteriorates under sunlight and the foil pouch prevents light from getting into the medication. The pouch is made of three layers with **nylon** on the outside laminated to foil and an interior layer of low-density polyethylene. The albuterol inhalation solution is sold in liquid form for dispersal from a nebulizer.

**24/8/11      (Item 11 from file: 160)**

DIALOG(R)File 160:(c) 1999 The Gale Group. All rts. reserv.

01621575

**New conductor sets a record for magnetic fields.**

April 23, 1987

PRODUCT: \*Electromagnets (3629340)

EVENT: \*Product Design &amp; Development (33)

COUNTRY: \*Belgium (4BEL)

**24/3,AB,K/5      (Item 5 from file: 148)**

DIALOG(R)File 148:Gale Group Trade &amp; Industry DB

(c)2004 The Gale Group. All rts. reserv.

02035676      SUPPLIER NUMBER: 03161752      (USE FORMAT 7 OR 9 FOR FULL TEXT)

**A new look at cystitis in women.**

Barber, Hugh K.; Derrick, Fletcher C.; Goldfarb, Alvin F.; Harris, Bruce; Brodoff, Ami S.

Patient Care, v18, p16(15)

Feb 29, 1984

ISSN: 0031-305X      LANGUAGE: ENGLISH      RECORD TYPE: FULLTEXT

WORD COUNT: 2285      LINE COUNT: 00185

**24/3,AB,K/7      (Item 7 from file: 160)**

DIALOG(R)File 160:Gale Group PROMT(R)

(c) 1999 The Gale Group. All rts. reserv.

01155164

**Nylon cubes improve shot blast efficiency.**

PLASTICS WORLD      January, 1985      p. 92

Emser Industries has introduced Emsodur **nylon** cubes for deflashing thermoset and rubber parts. Compared with polycarbonate pellets, which are usually made in cylindrical form, the cubical shape provides 2X as much cutting-edge length/unit volume. Efficiency is also aided by high wear resistance and reduced tendency to pick up color from the work. The uniform particle size eliminates the problem of clogging fine holes and slots. Lower impact velocities reduce the tendency to generate dust, which along with the antistatic additive in the compound, helps **prevent deposits** on the workpiece. The **nylon** deflashing media are available in 0.5-2 millimeters sizes.

**24/3,AB,K/10      (Item 10 from file: 160)**

DIALOG(R)File 160:Gale Group PROMT(R)

(c) 1999 The Gale Group. All rts. reserv.

01557454

**Control Static Electricity with improved Griff Stat (TM) Sheeting.**

NEWS RELEASE January 7, 1987 p. 11

Griffolyn (R) improves its Griff Stat (TM) product. This highly versatile flexible sheeting material reduces electrostatic **build-up** and discharge which is a primary problem when working with sensitive equipment. The antistatic properties of Griff Stat are manufactured permanently into the material, not applied as a spray which give only temporary benefits. Griff Stat (TM), is a 3 layer, flexible, rip-stop, poly-laminate material can be made into a multitude of pre-shapes and sizes. Dividers and partitions made of Griff Stat can separate electrical equipment from unsafe static environments. Flexible bags and tubing made of this durable material are used to transport sensitive components safely. Griff Stat is also available as custom component covers and shipping container liners. Because of its unique composition, the material **prevents build - up** of static electricity sometimes due to low room humidity or friction. Griff Stat can also withstand considerable puncture and stretching forces due to the layer of **nylon** cord which is between the polyfilm layers. Griff Stat also guards against static electric build-up that can occur while transporting, installing or storing sensitive electronic equipment. The electrostatic shielding benefit is useful during the shipment of manufactured products. Griff Stat meets all military specifications (MILSPEC B-81705B) except the printing of an antistatic label on the material.

Full text available on PTS New Product Announcements.

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200427  
File 347:JAPIO Nov 1976-2003/Dec(Updated 040402)  
File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	167827	POLYAMIDE? ? OR NYLON
S2	35927	ANTISTAT OR ANTISTATIC OR ANTI() (STAT OR STATIC)
S3	2710	INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D- EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)
S4	126713	SPACER? ? OR EXPANSION()CHAMBER? ?
S5	796905	CHAMBER? ?
S6	100115	IC=A61M
S7	1	S1 AND S2 AND S3 AND S4:S5 [a duplicate]
S8	10	S1:S2 AND S3 AND S4:S5
S9	9	S8 NOT S7

9/26,TI/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.  
016124919  
WPI Acc No: 2004-282795/200426

Aerosol metering valve for metered dose dispensing device to administer  
medicinal formulation to patient, has metering gasket forming transient  
fluid-tight seal between valve stem and sealing portion of body wall

9/26,TI/6 (Item 6 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.  
014126916  
WPI Acc No: 2001-611126/200170

Actuator nozzle for metered dose inhaler used to deliver medicaments,  
consists of fluid flow path outlet with exit channel of specified  
diameter with narrow portion of specific length

9/26,TI/8 (Item 8 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.  
008896938  
WPI Acc No: 1992-024207/199203  
Inhaler has non-circular chamber - with swirling air-flow and capsule holder

9/26,TI/9 (Item 9 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.  
003489350  
WPI Acc No: 1982-37313E/198219  
Oral inhaler for administering powdered medicament from capsule - which is  
automatically advanced from multi capsule magazine and simultaneously opened

9/7,K/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.  
014956568 \*\*Image available\*\*  
WPI Acc No: 2003-017082/200301  
Inhaler, useful for administering aerosol medication, comprises housing with  
opening for medication and elongated inhaler spacer movable from first to  
second position

Patent Assignee: GENOVA P A (GENO-I); JEWETT W R (JEWE-I); IEP PHARM  
DEVICES INC (IEPP-N)

Inventor: GENOVA P A; JEWETT W R

Number of Countries: 024 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020121276	A1	20020905	US 2001797468	A	20010301	200301 B
WO 200270059	A1	20020912	WO 2002US6215	A	20020301	200301
US 6595204	B2	20030722	US 2001797468	A	20010301	200354

Priority Applications (No Type Date): US 2001797468 A 20010301

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20020121276	A1	10	A61M-011/00	
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WO 200270059	A1 E		A61M-015/00	
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Designated States (National): AU BR CA JP

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU  
MC NL PT SE TR

US 6595204	B2		A61M-011/00	
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Abstract (Basic): US 20020121276 A1

NOVELTY - An **inhaler** (I), comprises:

(A) a hollow housing having an opening for dispensing medication;  
and

(B) an elongated **inhaler spacer** (10) rotatably coupled with the housing.

DETAILED DESCRIPTION - An **inhaler** (I), comprises:

(A) a hollow housing having an opening for dispensing medication;  
and

(B) an elongated **inhaler spacer** (10) rotatably coupled with the housing, which is movable from a first position in which it is parallel with the housing, to a second position which is approximately 90degrees to the housing.

In the second position, the **spacer** is slidable into an engagement with the opening in the housing.

USE - (I) is used for administering aerosol medication.

ADVANTAGE - (I) provides an optimized drug delivery, and a minimized drug retention. It inhibits velocity and minimizes impact of inhalant to the user.

DESCRIPTION OF DRAWING(S) - The figure shows the **spacer** .

**Spacer** (10)

Mouthpiece (20)

Protrusions (94, 96)

pp; 10 DwgNo 3/6

Derwent Class: B07; P34

International Patent Class (Main): A61M-011/00; A61M-015/00

Technology Focus:

... Preferred Component: An **inhaler** adapter attaches the **spacer** to the housing...

...The **spacer** includes axial protrusions (94, 96) at 45degrees relative to the housing. The **spacer** administers aerosol medication from a pressurized multi-dose **inhaler** . It comprises an elongated hollow **spacer** housing having a longitudinal axis and two ends located along the longitudinal axis. An end receives emissions of a pressurized **inhaler** with the other end for delivering emissions to the user. The **inhaler** further includes a mouthpiece (20). The **spacer** administers aerosol medication from a breath coordinated **inhaler** . ...

...Preferred Dimension: The dimensions of the **spacer** housing are such

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April 30, 2004

that the ratio of width to height is 1-0.7 when...  
 ...Preferred Material: The **spacer** is made of an **anti - static** material  
 having an electrical resistivity of at most 1 Megaohm/cm.

9/7,K/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

014892554 \*\*Image available\*\*

WPI Acc No: 2002-713260/200277

Container for treatment of respiratory inflammatory disease e.g. asthma,  
has valve containing one or more sealing gaskets substantially  
constructed of a polymer of ethylene-propylene-diene monomer and a  
pharmaceutical aerosol formulation

Patent Assignee: GLAXO GROUP LTD (GLAX ); GODFREY A P (GODF-I); WARBY R  
 (WARB-I)

Inventor: GODFREY A P; WARBY R; WARBY R J

Number of Countries: 098 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200251483	A1	20020704	WO 2001GB5749	A	20011221	200277 B
NO 200302836	A	20030815	WO 2001GB5749	A	20011221	200359
			NO 20032836	A	20030620	
EP 1343550	A1	20030917	EP 2001272108	A	20011221	200362
			WO 2001GB5749	A	20011221	
BR 200116396	A	20031111	BR 200116396	A	20011221	200379
			WO 2001GB5749	A	20011221	
US 20040050960	A1	20040318	WO 2001GB5749	A	20011221	200421
			US 2003451444	A	20031015	
AU 2002222304	A1	20020708	AU 2002222304	A	20011221	200427

Priority Applications (No Type Date): GB 200128612 A 20011129; GB 200031502  
 A 20001222

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200251483 A1 E 37 A61M-015/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
 CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
 IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
 PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
 Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
 IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

NO 200302836 A A61M-000/00

EP 1343550 A1 E A61M-015/00 Based on patent WO 200251483

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
 LI LT LU LV MC MK NL PT RO SE SI TR

BR 200116396 A A61M-015/00 Based on patent WO 200251483

US 20040050960 A1 B05B-009/03

AU 2002222304 A1 A61M-015/00 Based on patent WO 200251483

Abstract (Basic): WO 200251483 A1

NOVELTY - A container consisting of a sealed canister containing a  
 pharmaceutical aerosol formulation comprises:

(A) a metering **chamber** with a substantially fluorinated surface;  
 and

(B) a valve containing one or more sealing gaskets substantially  
 constructed of a polymer of ethylene-propylene-diene monomer (EPDM)

DETAILED DESCRIPTION - A container consisting of a sealed canister  
 containing a pharmaceutical aerosol formulation (I), comprising:

- (1) a metering **chamber** (4) with a substantially fluorinated surface;
  - (2) a valve containing one or more sealing gaskets substantially constructed of a polymer of EPDM; and
  - (3) a formulation comprising:
    - (a) particulate salmeterol xinafoate optionally in combination with another drug in inhalation therapy (II); suspended in
    - (b) a liquefied propellant gas comprising 1,1,1,2,3,3,3-heptafluoro-n-propane and/or 1,2,2,2-tetrafluoroethane.
- The formulation is substantially free of surfactant and components having polarity higher than the liquefied propellant gas.

INDEPENDENT CLAIMS are also included for:

- (i) a metered dose **inhaler** with a suitable channeling device;
- (ii) a metered dose **inhaler** package comprising (i) in a flexible wrapper, which is permeable to the evacuation of propellant gas and impermeable to the intrusion of atmospheric moisture;
- (iii) a container containing an aerosol formulation comprising:
  - (a) a canister sealed with metering valve (III) via a neck sealing gasket;
  - (b) an internally fluorinated metering **chamber** with lower and upper sealing gaskets and stem;
  - (c) where in (iiia) and (iiib), at least one gasket is made from a polymer of EPDM.
- (iv) a method for the treatment of asthma or chronic obstructive pulmonary disease (COPD).

USE - For use in treatment of respiratory disorders such as asthma, chronic obstructive pulmonary disease (COPD).

ADVANTAGE - Reduces wastage of the product, as gaskets are used in conjunction with metering **chamber**. Improves or simultaneously maintains dose stabilization delivered to the patient and fine particle mass (FPM). Reduces undesirable effects due to water ingress into the formulation, as water is repelled from the fluorinated surface.

Each tested metered dose **inhaler** (MDI) was placed into a clean actuator and primed by firing 4 shots. Then, 10 shots were fired into an Andersen Cascade Impactor which was quantitatively washed and the amount of drug deposited was analyzed by HPLC to obtain the dose delivered and the FPM.

Values of FPM which are lower than expected implied absorption, deposition and/or particle growth. Salmeterol MDIs with nitrile rubber gaskets (control) were compared with those comprising EPDM rubber gaskets.

The dose delivered (microg) initially, after 6 weeks and after 6/7 months were 18.5, 16.8, 13.4 for the control and 19.8, 18.7, 20.1 for the EPDM type MDI respectively.

FPM (microg) initially, after 6 weeks and after 6/7 months were 9.3, 7.2 and 5.0 for the control and 11.2, 10.7 and 10.5 for the EPDM type MDI respectively.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of metered dose **inhaler**.

- Valve body (1)
  - Can/neck seal (3)
  - Metering **chamber** (4)
  - Sampling **chamber** (5)
  - Upper metering **chamber** seal (12)
- pp; 37 DwgNo 1/2

Derwent Class: A92; B05; B07; P34; P42; Q34

International Patent Class (Main): A61M-000/00; A61M-015/00; B05B-009/03  
International Patent Class (Additional): A61K-009/00; B05B-007/30;  
B05B-007/32; B65D-083/14

Technology Focus:

... Metering **chamber** is constructed from plastic or metal...  
...The internal surface of the metering **chamber** is coated with a 1-10C  
perfluoroalkane, preferably fluorinated ethylene propylene (FEP), more  
preferably FEP...  
...Preferred Container: The plastic is preferably **nylon**, polybutylene  
terephthalate (PBT) or acetal, more preferably  
polyethylenetetrafluoroethylene (IV), polyvinylidene fluoride (VI),  
polyperfluoroalkoxyalkane (V), polychlorotrifluoroethylene, fluorinated...

9/7,K/4 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014846139

WPI Acc No: 2002-666845/200271

Dispenser for dispensing medicaments in dry or aqueous formulations e.g.  
fluid propellants, comprises reservoir for housing medicament and drug  
dispensing mechanisms

Patent Assignee: GLAXO GROUP LTD (GLAX ); OTTOLANGUI D M (OTTO-I)

Inventor: OTTOLANGUI D M

Number of Countries: 099 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200249569	A2	20020627	WO 2001EP13422	A	20011120	200271 B
AU 200221871	A	20020701	AU 200221871	A	20011120	200271
EP 1349529	A2	20031008	EP 2001271192	A	20011120	200370
			WO 2001EP13422	A	20011120	
US 20040056054	A1	20040325	WO 2001EP13422	A	20011120	200422
			US 2003451037	A	20031020	

Priority Applications (No Type Date): GB 200031176 A 20001221

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200249569	A2	E	44	A61J-000/00	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZM ZW  
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

AU 200221871	A			A61J-000/00	Based on patent WO 200249569
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EP 1349529	A2	E		A61J-001/00	Based on patent WO 200249569
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

US 20040056054	A1			B67D-003/00	
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Abstract (Basic): WO 200249569 A2

NOVELTY - Dispenser comprises a reservoir for housing a medicament  
and a drug dispensing mechanism. The surfaces of the reservoir and/or  
the drug dispensing mechanism comprise a conductive or semi-conductive  
material having an electropolished finish.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the  
following:

(a) a valve for use in a dispenser for dispensing a medicament in a  
fluid propellant;

(b) a valve stem for a valve for use in the dispenser for dispensing medicament in a formulation;

(c) a metering **chamber** for a valve for use in a dispenser for dispensing a medicament in a formulation;

(d) a metered dose **inhaler** comprising a dispenser and a medicament-channeling device, and

(e) a method of finishing the surfaces of a reservoir for housing medicament and/or a drug dispensing mechanism of a dispenser for dispensing a medicament in a fluid propellant which comprises electropolishing the surfaces.

USE - Used for dispensing medicament in a dry or aqueous formulation e.g. fluid propellant.

ADVANTAGE - The dispenser has improved smoothness of operation which alleviates the problem of valve sticking and which consistently deliver uniform doses of medicament.

pp; 44 DwgNo 0/3

Derwent Class: A96; B07; P33; Q39

International Patent Class (Main): A61J-000/00; A61J-001/00; B67D-003/00

Technology Focus:

... polymer. The coating also comprises a blend of fluoropolymer and a blend material, such as **polyamides**, polyimides, polyethersulfones, polyphenylene sulfides, or amine formaldehyde thermosetting resins. The polymer blends also comprise PTFE...

9/7,K/5 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014301551

WPI Acc No: 2002-122255/200216

**De-agglomerator for use with breath-actuated dry powder inhaler , comprises inner wall defining swirl chamber , dry powder supply port, inlet port(s), outlet port and vanes**

Patent Assignee: UNIV WAYNE STATE (UYWA-N); NORTON HEALTHCARE LTD (NORT-N); IVAX CORP (IVAX-N); KEANE L (KEAN-I); O'LEARY D (OLEA-I)

Inventor: KEANE L; O'LEARY D

Number of Countries: 096 Number of Patents: 013

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200197889	A2	20011227	WO 2001US20091	A	20010623	200216 B
GB 2365778	A	20020227	GB 200115518	A	20010625	200223
GB 2365779	A	20020227	GB 200115525	A	20010625	200223
GB 2366208	A	20020306	GB 200115519	A	20010625	200224
GB 2366740	A	20020320	GB 200115520	A	20010625	200227
AU 200184643	A	20020102	AU 200184643	A	20010623	200230
US 20020088463	A1	20020711	US 2000213382	P	20000623	200248
			US 2000213667	P	20000623	
			US 2000213668	P	20000623	
			US 2001888281	A	20010623	
GB 2372215	A	20020821	GB 200115523	A	20010625	200263
EP 1294421	A2	20030326	EP 2001963716	A	20010623	200323
			WO 2001US20091	A	20010623	
KR 2003028738	A	20030410	KR 2002714844	A	20021105	200353
KR 2003058937	A	20030707	KR 2002715133	A	20021111	200377
JP 2003535656	W	20031202	WO 2001US20091	A	20010623	200382
			JP 2002503371	A	20010623	
KR 2003066328	A	20030809	KR 2002716057	A	20021126	200402



Serial 10/617850

April 30, 2004

Priority Applications (No Type Date): US 2000213668 P 20000623; US  
2000213382 P 20000623; US 2000213667 P 20000623; US 2001888281 A 20010623

## Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200197889	A2	E	16	A61M-015/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA					
CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS					
JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL					
PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR					
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
GB 2365778	A			A61M-015/00	
GB 2365779	A			A61M-015/00	
GB 2366208	A			A61M-015/00	
GB 2366740	A			A61M-015/00	
AU 200184643	A			A61M-015/00	Based on patent WO 200197889
US 20020088463	A1			B05B-001/26	Provisional application US 2000213382
					Provisional application US 2000213667
					Provisional application US 2000213668
GB 2372215	A			A61M-015/00	
EP 1294421	A2	E		A61M-015/00	Based on patent WO 200197889
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT					
LI LT LU LV MC MK NL PT RO SE SI TR					
KR 2003028738	A			A61M-015/00	
KR 2003058937	A			A61M-015/00	
JP 2003535656	W		20	A61M-015/00	Based on patent WO 200197889
KR 2003066328	A			A61M-015/00	

Abstract (Basic): WO 200197889 A2

NOVELTY - A de-agglomerator comprises an inner wall defining a swirl **chamber**; a dry powder supply port for providing fluid communication between dry powder delivery passageway and first end of the **chamber**; outlet port and inlet port(s) for providing fluid communication between respective ends of the **chamber** and a region exterior to the de-agglomerator; and vanes at the first end of the swirl **chamber**.

DETAILED DESCRIPTION - A de-agglomerator comprises an inner wall defining a swirl **chamber** which extends along an axis from a first end to a second end of the swirl **chamber**; a dry powder supply port in the first end of the swirl **chamber** for providing fluid communication between a dry powder delivery passageway of a breath-actuated dry powder **inhaler** and the first end of the swirl **chamber**.

Inlet port(s) in the inner wall adjacent to the first end of the swirl **chamber** for providing fluid communication between a region exterior to the de-agglomerator and the first end of the swirl **chamber**; an outlet port providing fluid communication between the second end of the swirl **chamber** and a region exterior to the de-agglomerator; and vanes at the first end of the swirl **chamber**.

The vanes extend at least in part radially outwardly from the axis of the **chamber**.

Each vane has an oblique surface facing at least in part in a direction transverse to the axis. A breath induced low pressure at the outlet port causes air to flow into the swirl **chamber** through the dry powder supply port and the inlet port.

INDEPENDENT CLAIMS are also included for:

- (A) a breath-actuated dry powder **inhaler**, including: the
- (a) de-agglomerator;

(b) the dry powder delivery passageway providing fluid communication between a region exterior to the **inhaler** and the dry powder supply port; and

(c) a dry powder reservoir for exposing a predetermined amount of the dry powder to the dry powder delivery passageway, where an air flow through the dry powder delivery passageway and supply port will entrain the dry powder from the dry powder reservoir into the swirl **chamber**; and

(B) a method of de-agglomerating dry powder from the breath-actuated dry powder **inhaler** prior to inhalation of the dry powder by a patient, comprising:

(i) directing a first breath-actuated air flow for entraining a dry powder from the **inhaler** into the first end of the **chamber** which longitudinally extends between the first and second ends of the **chamber**, the first air flow is directed in a longitudinal direction;

(ii) directing a second breath-actuated airflow in a transverse direction into the first end of the **chamber**, such that the airflows collide and combine;

(iii) deflecting a portion of the combined airflows in longitudinal direction towards the second end of the **chamber**;

(iv) directing the remaining portion of the combined airflows in a spiral path towards the second end of the **chamber**; and

(v) delivering all the combined airflows and any entrained dry powder from the second end of the **chamber** to a patient's mouth.

USE - For use with a breath-actuated dry powder **inhaler** (claimed) for breaking up aggregates and micronizing particles of the dry powder prior to inhalation of the powder by a patient.

ADVANTAGE - The inventive de-agglomerator ensures that the particles of the dry powder are smaller enough for adequate penetration of the powder into a bronchial region of a patient's lungs during inhalation of the dry powder by the patient.

pp; 16 DwgNo 0/6

Derwent Class: B07; P34; P42; Q34

International Patent Class (Main): A61M-015/00; B05B-001/26

International Patent Class (Additional): A61M-011/00; A61M-016/00;

B05D-007/14; B65D-083/06; B65D-083/14

Technology Focus:

... from a hub which is aligned with the axis to the wall of the swirl **chamber**; and an **antistatic** additive. The swirl **chamber** includes cross-sectional areas arranged transverse to the axis; and circular cross-sectional areas coaxially...

...cross-sectional areas decrease from the first end to the second end of the swirl **chamber** .

...The inner wall of the swirl **chamber** is convex. The dry powder supply port faces in a direction parallel to the axis...

...closed with a cover. The base defines the inner wall, the second end of the **chamber** and the outlet port. The cover defines the first end of the **chamber**, the vanes and the supply port. The inlet port is defined by both the base...

...The dry powder delivery passageway includes a venturi adjacent the dry powder reservoir. The **inhaler** includes a dry powder in the dry powder reservoir...

...Method: The second breath-actuated airflow is directed tangentially into the first end of the **chamber**. A third breath-actuated airflow is directed in a transverse direction into the first end of the **chamber**, such that the third airflow collides and combines with the first and

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second airflows...

...combined airflows and any entrained dry powder are delivered from the second end of the **chamber** to the patient's mouth in a transverse direction. They are constricted or monotonically constricted between the first and second ends of the **chamber**.

9/7,K/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011869707

WPI Acc No: 1998-286617/199825

**Fluoro-polymer coating for spacers used in metered dose inhalers - reduces drug build-up on the spacers and improves drug delivery to the patient.**

Patent Assignee: DU PONT DE NEMOURS & CO E I (DUPO ); DU PONT DE NEMOURS & CO INC E I (DUPO )

Inventor: ROSENBERG G E

Number of Countries: 022 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9819727	A1	19980514	WO 97US19681	A	19971029	199825 B
AU 9851954	A	19980529	AU 9851954	A	19971029	199841
EP 942762	A1	19990922	EP 97946860	A	19971029	199943
			WO 97US19681	A	19971029	
JP 2002515794	W	20020528	WO 97US19681	A	19971029	200238
			JP 98521549	A	19971029	

Priority Applications (No Type Date): US 97959746 A 19971028; US 9630152 P 19961101

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9819727 A1 E 12 A61M-011/00

Designated States (National): AU CA JP NZ

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

AU 9851954 A A61M-011/00 Based on patent WO 9819727

EP 942762 A1 E A61M-011/00 Based on patent WO 9819727

Designated States (Regional): BE CH DE DK ES FR GB IT LI NL SE

JP 2002515794 W 14 A61M-011/00 Based on patent WO 9819727

Abstract (Basic): WO 9819727 A

A **spacer** (I) for use with a metered dose **inhaler** has its interior surface coated with fluoropolymer, optionally containing an **anti - static** electrically conductive material.

The **spacer** (I) is made of fluoropolymer and comprises an outer layer of plastic and an inner layer of fluoropolymer, preferably tetrafluoroethylene or hexafluoropropylene copolymer.

USE - The **spacer** is useful in metered dose **inhalers** for the transport of drugs into respiratory airways by dermal, pulmonary and mucosal pathways. The drugs are e.g. antiallergic agent, analgesics, bronchodilators, antihistamines, antitussives, antianginal agents, antibiotics, anti-inflammatory agents, hormones, peptides, steroids, enzymes and sulphonamides.

ADVANTAGE - The fluoropolymer coating reduces drug build up on the **spacer** and improves delivery to patients.

Dwg.0/2

Derwent Class: A96; B07; P34

International Patent Class (Main): A61M-011/00

Serial 10/617850

April 30, 2004

File 348:EUROPEAN PATENTS 1978-2004/Apr W02

File 349:PCT FULLTEXT 1979-2002/UB=20040415,UT=20040408

Set	Items	Description
S1	127643	POLYAMIDE? ? OR NYLON
S2	19275	ANTISTAT OR ANTISTATIC OR ANTI() (STAT OR STATIC)
S3	9145	INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D- EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)
S4	71911	SPACER? ? OR EXPANSION() CHAMBER? ?
S5	231124	CHAMBER? ?
S6	32529	IC=A61M
S7	1	S1(S) S2(S) S3(S) S4:S5 [a duplicate]
S8	16	S1:S2(S) S3(S) S4:S5
S9	15	S8 NOT S7
S10	15	S6 AND S9
S11	873	S1:S2(10N) S4:S5
S12	11	S11(S) S3 NOT S7

12/6/7 (Item 2 from file: 349)

00515843 \*\*Image available\*\*

VALVE FOR AEROSOL CONTAINER

12/3,AB,K/1 (Item 1 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00879178

Powder inhaler

Pulverinhalator

Inhalateur a poudre

PATENT ASSIGNEE:

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Kings Hill, West Malling, Kent ME19 4AH, (GB), (Proprietor designated  
states: all)

INVENTOR:

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Dagenham, Essex RM10 7XS, (GB)

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Hobbs, Michael Anthony, Rhone-Poulenc Rorer Ltd., Rainham Road South,  
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West, Anthony Douglas, Rhone-Poulenc Rorer Ltd., Rainham Road South,  
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LEGAL REPRESENTATIVE:

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PATENT (CC, No, Kind, Date): EP 804935 A2 971105 (Basic)

EP 804935 A3 980107

EP 804935 B1 020904

APPLICATION (CC, No, Date): EP 97110943 910614;

PRIORITY (CC, No, Date): GB 9013261 900614; GB 9106612 910328

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; SE

RELATED PARENT NUMBER(S) - PN (AN) :

EP 533747 (EP 91910833)

INTERNATIONAL PATENT CLASS: A61M-015/00

ABSTRACT EP 804935 A2

An inhaler for inhaling pulverulent medicament from within a capsule comprises a chamber 24 within which the capsule is free to rotate while having its longitudinal axis in the median plane of the chamber and thus generally parallel to the front and rear walls 29 and 30 of the chamber, by virtue of the fact that the spacing between said front and rear walls is less than the axial length of the capsule but just greater than the diameter of the capsule. The device includes pins 21 serving as opening means to pierce the ends of the capsule while it is seated in a recess 25, whereupon the retraction of the pins 21 allows the capsule to be entrained into swirling airflow in the chamber 24 during inhalation of air through air inlets 26 and out through a mouthpiece nozzle 27.

ABSTRACT WORD COUNT: 142

NOTE: Figure number on first page: 7 8

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	199710W5	1372
CLAIMS B	(English)	200236	400
CLAIMS B	(German)	200236	402
CLAIMS B	(French)	200236	448
SPEC A	(English)	199710W5	6902
SPEC B	(English)	200236	3042

Total word count - document A 8275

Total word count - document B 4292

Total word count - documents A + B 12567

...SPECIFICATION portion 3 may be formed of a polymer with a low surface resistivity, thereby having **anti - static** properties. Preferably the material defining the inside wall of the **chamber** 3 is a polymer having a surface resistivity less than 1012) Ohms or more preferably...

...CLAIMS An inhaler according to any one of claims 1 to 8, characterised in that the **chamber** has walls defined of an **anti - static** member having a surface resistivity of less than 1012) Ohms.

...CLAIMS are effective to open the capsule only while said air inlets are closed.

4. An **inhaler** according to any one of claims 1 to 3, characterised in that the **chamber** has walls defined of an **anti - static** member having a surface resistivity of less than 1012) Ohms.

12/3,AB,K/2 (Item 2 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00630664

INHALER

INHALATIONSGERAT

INHALATEUR

PATENT ASSIGNEE:

RHONE-POULENC RORER LIMITED, (1485053), RPR House, 50 Kings Hill Avenue, Kings Hill, West Malling, Kent ME19 4TA, (GB), (applicant designated states: AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;PT;SE)

INVENTOR:

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April 30, 2004

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PATENT (CC, No, Kind, Date): EP 613384 A1 940907 (Basic)

EP 613384 B1 980729

WO 9217233 921015

APPLICATION (CC, No, Date): EP 92906638 920318; WO 92GB480 920318

PRIORITY (CC, No, Date): GB 9106648 910328

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; PT;  
SE

INTERNATIONAL PATENT CLASS: A61M-015/00;

NOTE: No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

## FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9831	577
CLAIMS B	(German)	9831	529
CLAIMS B	(French)	9831	630
SPEC B	(English)	9831	6033
Total word count - document A			0
Total word count - document B			7769
Total word count - documents A + B			7769

...SPECIFICATION the released powdered medicament can agglomerate on the  
surface of the air passage through the **inhaler**, the chamber portion 72  
is formed of a polymer of low surface resistivity, thereby having **anti -  
static** properties. Preferably the material defining the inside wall of  
the **chamber** 26,28 is a polymer having a surface resistivity of less  
than 1012) Ohms or...

12/3,AB,K/3 (Item 3 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00538036

**Inhaler.**

**Inhalationsgerat.**

**Inhalateur.**

## PATENT ASSIGNEE:

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Essex RM10 7XS, (GB), (applicant designated states: PT)

## INVENTOR:

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LEGAL REPRESENTATIVE:

Barlow, Roy James et al (28012), J.A. KEMP & CO. 14, South Square, Gray's  
Inn, London WC1R 5LX, (GB)

PATENT (CC, No, Kind, Date): EP 506293 A1 920930 (Basic)

APPLICATION (CC, No, Date): EP 92302325 920318;

PRIORITY (CC, No, Date): GB 9106648 910328

DESIGNATED STATES: PT

INTERNATIONAL PATENT CLASS: A61M-015/00;

ABSTRACT EP 506293 A1

An inhaler for powdered medicament in capsules has a swirling chamber which can be opened to allow access of a closed capsule into the swirling chamber for operation of capsule-opening means in the swirling chamber. Access to the swirling chamber is gained by a pivoting cover member (22) which is provided with interlock means associated with the capsule-opening means to ensure that the capsule opening means cannot be operated while the cover member is in its open position to allow access of the user's fingers to the region (28) of the swirling chamber (26,28) where the capsule-opening pins (30) could damage the user's finger. (see image in original document)

ABSTRACT WORD COUNT: 111

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	546
SPEC A	(English)	EPABF1	5694
Total word count - document A			6240
Total word count - document B			0
Total word count - documents A + B			6240

...SPECIFICATION the released powdered medicament can agglomerate on the surface of the air passage through the **inhaler**, the chamber portion 72 is formed of a polymer of low surface resistivity, thereby having **anti-static** properties. Preferably the material defining the inside wall of the **chamber** 26,28 is a polymer having a surface resistivity of less than 10(sup 1...

12/3,AB,K/4 (Item 4 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00538035

**Inhaler.**

**Inhalationsgerat.**

**Inhalateur.**

PATENT ASSIGNEE:

RHONE-POULENC RORER LIMITED, (460216), Rainham Road South, Dagenham,  
Essex RM10 7XS, (GB), (applicant designated states: PT)

INVENTOR:

Cook, Robert Stanley c/o Rhone-Poulenc Rorer Ltd., Rainham Road South,  
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Leighton, Ann-Marie, c/o Rhone-Poulenc Rorer Ltd, Rainham Road South,  
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## LEGAL REPRESENTATIVE:

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PATENT (CC, No, Kind, Date): EP 506292 A1 920930 (Basic)

APPLICATION (CC, No, Date): EP 92302324 920318;

PRIORITY (CC, No, Date): GB 9106649 910328

DESIGNATED STATES: PT

INTERNATIONAL PATENT CLASS: A61M-015/00;

ABSTRACT EP 506292 A1

An inhaler has a removable capsule reservoir 74,76, comprising a container portion 74 having a closure 76 removable to reveal the interior of said reservoir and closable to define one entire side face of said reservoir, the closure member 76 being hinged to the container portion at thin film hinge 78. The capsule container is closed by a sliding cover 16 held to the container 74 for sliding movement along a second face of the closure reservoir opposite said first face defined by the closure 76.

(see image in original document)

ABSTRACT WORD COUNT: 93

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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CLAIMS A	(English)	EPABF1	586
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SPEC A	(English)	EPABF1	5694
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Total word count - document A	6280
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Total word count - document B	0
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Total word count - documents A + B	6280
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...SPECIFICATION the released powdered medicament can agglomerate on the surface of the air passage through the **inhaler**, the chamber portion 72 is formed of a polymer of low surface resistivity, thereby having **anti-static** properties. Preferably the material defining the inside wall of the **chamber** 26,28 is a polymer having surface resistivity of less than 10(sup 1)(sup...

12/3,AB,K/5 (Item 5 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2004 European Patent Office. All rts. reserv.

00505273

INHALER

INHALATOR

INHALATEUR

PATENT ASSIGNEE:

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INVENTOR:

CALVERT, John, Richard, Rhone-Poulenc Rorer Limited, Rainham Road South, Dagenham, Essex RM10 7XS, (GB)

COOK, Robert, Stanley, Rhone-Poulenc Rorer Limited, Rainham Road South, Dagenham, Essex RM10 7XS, (GB)

HOBBS, Michael, Anthony, Rhone-Poulenc Rorer Limited, Rainham Road South, Dagenham, Essex RM10 7XS, (GB)

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SIMPKIN, Gordon, Thomas, Rhone-Poulenc Rorer Limited, Rainham Road South,



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WEST, Anthony, Douglas, Rhone-Poulenc Rorer Limited, Rainham Road South,  
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LEGAL REPRESENTATIVE:  
Caffin, Lee (62322), Rhone-Poulenc Rorer Limited, Rainham Road South,  
Dagenham, Essex RM10 7XS, (GB)  
PATENT (CC, No, Kind, Date): EP 533747 A1 930331 (Basic)  
EP 533747 B1 980128  
WO 9119524 911226  
APPLICATION (CC, No, Date): EP 91910833 910614; WO 91GB958 910614  
PRIORITY (CC, No, Date): GB 9013261 900614; GB 9106612 910328  
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; SE  
INTERNATIONAL PATENT CLASS: A61M-015/00;  
NOTE: No A-document published by EPO  
LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:  

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9805	451
CLAIMS B	(German)	9805	408
CLAIMS B	(French)	9805	450
SPEC B	(English)	9805	2125
Total word count - document A			0
Total word count - document B			3434
Total word count - documents A + B			3434

...SPECIFICATION an inhalation airstream to release powdered medicament  
from the interior of the container; wherein the **chamber** has walls  
defined of an **anti - static** member having a surface resistivity of less  
than 1012) Ohms.  
In order that the present...chamber portion 3 are formed of a polymer  
with a low surface resistivity, thereby having **anti - static**  
properties. Preferably the material defining the inside wall of the  
**chamber** 3 is a polymer having a surface resistivity less than 1012) Ohms  
or more preferably...  
CLAIMS 1. An **inhaler** comprising a mouthpiece (6) (27) (61); and a  
swirling chamber to receive a container (5...  
...airstream to release powdered medicament from the interior of the  
container; characterised in that the **chamber** has walls defined of  
an **anti - static** member having a surface resistivity of less than  
1012) Ohms.  
2. An inhaler according to...  
...of claims 1 to 5, and further characterised by including an electrically  
conductive or otherwise **anti - static** grid disposed between said  
**chamber** and said mouthpiece through which grid the inhalation  
airflow and entrained medicament pass.  
7. An...  
  
12/3,AB,K/9 (Item 4 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00219998  
INHALER  
INHALATEUR  
Patent Applicant/Assignee:  
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HOBBS Michael Anthony,  
LEIGHTON Ann-Marie,  
SIMPKIN Gordon Thomas,  
TRUNLEY Roy,

Inventor(s):

COOK Robert Stanley,  
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LEIGHTON Ann-Marie,  
SIMPKIN Gordon Thomas,  
TRUNLEY Roy,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9217233 A1 19921015

Application: WO 92GB480 19920318 (PCT/WO GB9200480)

Priority Application: GB 916648 19910328

Designated States: AT AU BE CA CH CS DE DK ES FI FR GB GR HU IT JP KR LU MC  
NL NO PL RU SE US

Publication Language: English

Fulltext Word Count: 6752

English Abstract

An inhaler for powdered medicament in capsules has a swirling chamber which can be opened to allow access of a closed capsule into the swirling chamber for operation of capsule-opening means in the swirling chamber. Access to the swirling chamber is gained by a pivoting cover member (22) which is provided with interlock means associated with the capsule-opening means to ensure that the capsule opening means cannot be operated while the cover member is in its open position to allow access of the user's fingers to the region (28) of the swirling chamber (26, 28) where the capsule-opening pins (30) could damage the user's finger.

Fulltext Availability: Detailed Description

Detailed Description

... the released powdered medicament can agglomerate on the surface of the air passage through the **inhaler**, the chamber portion 72 is formed of a polymer of low surface resistivity, thereby having 25 **anti - static** properties. Preferably the material defining the inside wall of the **chamber** 26.28 is a polymer having a surface resistivity of less than 1012 ohms or...

12/3,AB,K/10 (Item 5 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00219997

**INHALER**

**INHALATEUR**

Patent Applicant/Assignee:

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HOBBS Michael Anthony,  
LEIGHTON Ann-Marie,  
SIMPKIN Gordon Thomas,  
TRUNLEY Roy,

Inventor(s):

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HOBBS Michael Anthony,  
LEIGHTON Ann-Marie,  
SIMPKIN Gordon Thomas,

TRUNLEY Roy,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9217232 A1 19921015

Application: WO 92GB479 19920318 (PCT/WO GB9200479)

Priority Application: GB 916649 19910328

Designated States: AT AU BE CA CH CS DE DK ES FI FR GB GR HU IT JP KR LU MC

NL NO PL RU SE US

Publication Language: English

Fulltext Word Count: 6805

English Abstract

An inhaler has a removable capsule reservoir (74, 76), comprising a container portion (74) having a closure (76) removable to reveal the interior of said reservoir and closable to define one entire side face of said reservoir, the closure member (76) being hinged to the container portion at thin film hinge (78). The capsule container is closed by a sliding cover (16) held to the container (74) for sliding movement along a second face of the closure reservoir opposite said first face defined by the closure (76).

Fulltext Availability: Detailed Description

Detailed Description

... the released powdered medicament can agglomerate on the surface of the air passage through the **inhaler**, the chamber portion 72 is formed of a polymer of low surface resistivity, thereby having **anti - static** properties. Preferably the material defining the inside wall of the **chamber** 26,28 is a polymer having surface resistivity of less than 1012 Ohms or more...

Serial 10/617850

April 30, 2004

File 350:Derwent WPIX 1963-2004/UD,UM &amp;UP=200427

File 347:JAPIO Nov 1976-2003/Dec(Updated 040402)

File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	2710	INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D- EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)
S2	913128	SPACER? ? OR CHAMBER? ?
S3	181187	BUILDUP? ? OR BUILD()UP? ? OR DEPOSIT? ?
S4	168563	POLYAMIDE? ? OR NYLON OR POLYMER??() (AMIDE OR AMIDES)
S5	100115	IC=A61M
S6	2505	POLYMER??() (AMIDE OR AMIDES)
S7	0	S1 AND S2 AND S6
S8	6	S1 AND S2 AND S4
S9	24	(S1 AND S4) NOT S8
S10	15	S9 AND S5
S11	0	S9 AND S3
S12	9	S9 NOT S10

8/34/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016124919 \*\*Image available\*\*

WPI Acc No: 2004-282795/200426

Aerosol metering valve for metered dose dispensing device to administer  
medicinal formulation to patient, has metering gasket forming transient  
fluid-tight seal between valve stem and sealing portion of body wall

Patent Assignee: 3M INNOVATIVE PROPERTIES CO (MINN )

Inventor: GREENLEAF D J; HODSON P D; KLEIN H G; MAHON G D; PURKINS G

Number of Countries: 104 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200422143	A2	20040318	WO 2003US27829	A	20030904	200426 B

Priority Applications (No Type Date): GB 200315791 A 20030707; US

2002408637 P 20020906

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200422143 A2 E 41 A61M-015/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO  
NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ  
VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB  
GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ  
UG ZM ZW

Abstract (Basic): WO 200422143 A2

NOVELTY - An aerosol metering valve comprises a valve stem with a body portion having a metering surface, metering gasket, and a stem portion comprising a discharge passageway; a valve body comprising an internal **chamber** with a metering portion; and a diaphragm having walls defining an aperture. The metering gasket forms a transient fluid-tight seal between valve stem and sealing portion of body wall.

DETAILED DESCRIPTION - A aerosol metering valve comprises a valve stem (26) defining a longitudinal axis and comprising a body (22, 24) portion with a metering surface, a stem portion comprising a discharge passageway (50), and a metering gasket; a valve body comprising a body

wall having a sealing portion and an internal chamber (38) defined at least in part by the body wall and comprising a metering portion to conform to the metering surface of the valve stem; and a diaphragm (20) having walls defining an aperture in slidable sealing engagement with the stem portion of the valve stem. The metering gasket (32) forms a transient, fluid-tight face seal between the valve stem and sealing portion of the body wall. The longitudinal axis and a plane tangential to at least a portion of the metering surface define an angle of 2-90 degrees.

USE - The valve is useful for a metered dose dispensing device, i.e. metered dose **inhaler**, for administering medicinal formulation including a liquefied gas propellant to a patient.

ADVANTAGE - The invention provides improved consistency of formulation delivery, limits or eliminates the residual metering volume to reduce the amount of formulation residing in the metering **chamber** while the metering valve is at rest, limits restrictions on the free flow of formulation into the metering **chamber**, and reduces the effects of loss of prime and loss of dose.

DESCRIPTION OF DRAWING(S) - The figure shows an enlarged cross-sectional view of an aerosol metering valve.

Diaphragm (20)

Body (22, 24)

Valve stem (26)

Metering surface (28)

Sealing surface (30, 40)

Metering gasket (32)

Internal **chamber** (38)

Discharge passageway (50)

pp; 41 DwgNo 5/16

#### Technology Focus:

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Component: The body portion of the valve stem comprises a sealing surface adjacent to the metering surface and distant from the stem portion of the valve stem. The sealing surface (30, 40) and metering surface (28) form a circumferential interface on the outer surface of the metering gasket. The metering gasket forms a transient, fluid-tight face seal with at least a portion of the sealing portion of the body wall. The valve stem comprises a sealing portion of the interior space from the inlet recess distal of the metering stem, a metering surface to conform the metering surface of the metering stem, an interior surface, a discharge recess in a portion of the interior surface, and a discharge passageway. The metering gasket comprises no portion aligned parallel or nearly parallel to the longitudinal axis. It is co-molded with at least a portion of the valve stem.

Preferred Property: The longitudinal axis and plane tangential to at least a portion of the sealing surface define an angle of 30-90 degrees. The angle of the metering surface is at least 10 degrees, preferably at most 60 degrees.

POLYMERS - Preferred Material: The metering gasket is made of a material comprising a thermoplastic elastomer or a thermoset elastomer. The non-metering-gasket portion of the valve stem is made of material comprising a polymer. The polymer is acetal, **nylon**, polyester, polybutylene terephthalate, polymethylpentene, polyphenylenesulfide, polyaryletherketones, thermotropic liquid crystalline polymers, polypropylene, high density polypropylene, ethylene-tetrafluoroethylene copolymer, and/or poly-vinylidene difluoride. It can be

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April 30, 2004

polyaryletherketones, thermotropic liquid crystalline polymers, polymethylpentene, and/or polyphenylene sulfide. The metering gasket is made of a material comprising a thermoset elastomer from ethylene propylene diene monomer, nitrile, butyl rubber, chlorobutyl rubber, bromobutyl rubber, or neoprene.

Derwent Class: A96; B07; P34

International Patent Class (Main): A61M-015/00

8/34/4 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014126916 \*\*Image available\*\*

WPI Acc No: 2001-611126/200170

Actuator nozzle for metered dose inhaler used to deliver medicaments, consists of fluid flow path outlet with exit channel of specified diameter with narrow portion of specific length

Patent Assignee: GLAXO GROUP LTD (GLAX ); ZHAO J (ZHAO-I)

Inventor: ZHAO J

Number of Countries: 095 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200158508	A2	20010816	WO 2001US4158	A	20010208	200170 B
AU 200138080	A	20010820	AU 200138080	A	20010208	200175
EP 1292395	A2	20030319	EP 2001910482	A	20010208	200322
			WO 2001US4158	A	20010208	
US 20030089368	A1	20030515	WO 2001US4158	A	20010208	200335
			US 2002203166	A	20020808	
JP 2003522081	W	20030722	JP 2001557616	A	20010208	200350
			WO 2001US4158	A	20010208	

Priority Applications (No Type Date): GB 20002798 A 20000209

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200158508 A2 E 49 A61M-000/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200138080 A A61M-000/00 Based on patent WO 200158508

EP 1292395 A2 E B05B-001/00 Based on patent WO 200158508

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

US 20030089368 A1 A61M-011/00

JP 2003522081 W 50 B65D-083/40 Based on patent WO 200158508

Abstract (Basic): WO 200158508 A2

NOVELTY - A novel actuator (16) consists of a nozzle block (32) having a fluid flow path, defined by an internal **chamber** having an inlet and outlet. The outlet comprises an exit channel which has a narrow portion. The diameter of the channel is 0.3 mm or less and the length of the narrow portion is 0.5 mm or less. The narrow portion optionally includes a constriction which has a diameter of 0.3 mm or less.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) metered dose **inhaler** ; and

(b) a method for the treatment, prophylaxis or diagnosis of a condition or disease in a patient..

USE - For metered dose **inhalers** which deliver therapeutic, prophylactic and diagnostic agents for treatment, prophylaxis or diagnosis of illness and other conditions of patient.

ADVANTAGE - The **inhaler** is capable of generating highly fine particles by using small diameter orifice nozzles and reduces velocity and size of particles emitted from the device. Avoids failure due to clogging and eliminates use of **spacer**.

DESCRIPTION OF DRAWING(S) - The figure shows the sectional view of the actuator nozzle.

**Inhaler** (12)  
Canister (14)  
Actuator (16)  
Valve stem (20)  
Central cavity (22)  
Nozzle block (32)  
pp; 49 DwgNo 5/9

Technology Focus:

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred

Actuator: The actuator (16) consists of a nozzle block (32) having a fluid flow path, defined by an internal **chamber** having an inlet and outlet. The outlet comprises an exit channel which has a narrow portion. The diameter of the channel is 0.3 mm or less and the length of the narrow portion is 0.5 mm or less. The narrow portion optionally includes a constriction which has a diameter of 0.3 mm or less. The canister (14) of the **inhaler** (12) is positioned in the central cavity (22) such that the valve stem (20) is received within the valve stem recess or stem block of nozzle. The exit channel of the nozzle block comprises a plate and a material which has a surface energy of 25 dynes/cm or less and a smooth surface having Ra value of 1 micron or less. The material comprises a crystalline material (silicon), metal or polymeric material. The metals include aluminum, gold, nickel and stainless steel.

POLYMERS - Preferred Polymers: The polymeric material comprises polyethylene, polypropylene, polymethylmethacrylate, polyvinyl chloride, polyvinylidene chloride, polyvinyl fluoride, polyvinylidene fluoride, polychlorotrifluoroethylene, polytetrafluoroethylene, fluorinated ethylene propylene, perfluoroalkoxy, **polyamide**, polyethylene terephthalate, polybutylene terephthalate, polyetherimide, polyamideimide, polyimide, polysulfone, polyarylsulfone, polyethersulfone, polyphenylene sulfide, polyetheretherketone, polydimethylsiloxane and polycarbonate.

Derwent Class: A96; B07; P34; P42; Q34

International Patent Class (Main): A61M-000/00; A61M-011/00; B05B-001/00; B65D-083/40

International Patent Class (Additional): B05B-001/02; B05B-009/04

8/34/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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003489350

WPI Acc No: 1982-37313E/198219

Oral inhaler for administering powdered medicament from capsule - which is automatically advanced from multi capsule magazine and simultaneously opened

Patent Assignee: RIKER LAB INC (RIKL )

Serial 10/617850

April 30, 2004

Number of Countries: 022 Number of Patents: 016

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
BE 890937	A	19820430				198219 B
WO 8201470	A	19820513				198220
PT 73899	A	19820608				198228
BR 8108856	A	19820921				198240
NO 8202300	A	19820913				198240
EP 63599	A	19821103	EP 81903150	A	19811028	198245
JP 57501815	W	19821014				198247
FI 8202333	A	19830228				198315
DK 8202938	A	19830418				198322
ZA 8107513	A	19830418				198325
CA 1169322	A	19840619				198429
IL 64160	A	19850630				198538
EP 63599	B	19860604				198623
DE 3174779	G	19860710				198629
IT 1140010	B	19860924				198820
US 4860740	A	19890829	US 8713191	A	19870210	198944

Priority Applications (No Type Date): GB 8034867 A 19801030  
 Cited Patents: GB 2061735; US 2587215; US 3870044; US 4210140; US 4240418;  
 US 3870046

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
BE 890937	A		37		
WO 8201470	A	E			
Designated States (National): AU BR DK FI JP NO US					
Designated States (Regional): AT CH DE FR GB LU NL SE					
EP 63599	A	E			
Designated States (Regional): CH DE FR GB LI NL SE					
EP 63599	B	E			
Designated States (Regional): CH DE FR GB LI NL SE					

Abstract (Basic): BE 890937 A

A hand-held **inhaler** which is hand operated for inhalation by oral suction of a powdered medicament. The powder is in measured doses each contained in a two part capsule. The **inhaler** is of the type in which the capsule parts are sepd. to release the powder inside a **chamber** which is located in series between an air inlet and a suction mouthpiece. A number of capsules are stored in individual pockets of revolving magazine. Operation of the **inhaler**, e.g. by pivoting an integral hinged lever, initiates the following cycle of events:- 1. A first capsule has its cover component pulled away to leave the powder contg. component open-topped. 2. Pawl and ratchet action rotates the magazine to position the opened capsule component in the powder **chamber**. Powder is now available for inhalation by sucking the mouthpiece. 3. The same angular movement of that magazine positions a second capsule ready to have its cover component gripped and pulled away at the start of the next cycle.

The **inhaler** body, together with integral hinged operating lever, magazine displacement pawl and magazine axle pin, is pref. injection moulded in e.g., polypropylene or **nylon**. The magazine and coaxial toothed ratchet is pref. also a plastic moulding.

The **inhaler** is used for administering a powdered medicament to a patient suffering from respiratory problems.

Derwent Class: B07; P33; P34

International Patent Class (Additional): A61H-000/00; A61M-013/00;



Serial 10/617850

April 30, 2004

A61M-015/00

10/26, TI/5 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014374957

WPI Acc No: 2002-195660/200225

Package for storing pressurized containers filled with drug formulation  
comprises moisture absorbing materials

10/34/1 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014958200

WPI Acc No: 2003-018714/200301

Canister for use in metered dose inhalers used in treatment of  
respiratory disorders, has walls made of laminate consisting of metal and  
strengthening plastic layers

Patent Assignee: GLAXO GROUP LTD (GLAX )

Inventor: BURT P C W; CHAN S

Number of Countries: 101 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200272449	A1	20020919	WO 2002GB1088	A	20020311	200301 B
EP 1368255	A1	20031210	EP 2002702569	A	20020311	200382
			WO 2002GB1088	A	20020311	

Priority Applications (No Type Date): GB 20016046 A 20010312

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200272449 A1 E 25 B65D-083/38

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU  
ZA ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

EP 1368255 A1 E B65D-083/38 Based on patent WO 200272449

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

Abstract (Basic): WO 200272449 A1

NOVELTY - The walls of canister, are formed of laminate consisting  
of metal layer and strengthening plastic layer.

ACTIVITY - Antiasthmatic; Respiratory-Gen.

MECHANISM OF ACTION - None given.

USE - For use in metered dose inhalers used for treatment of  
respiratory disorders such as asthma and chronic obstructive pulmonary  
disease.

ADVANTAGE - Provides equivalent or greater strength than thicker  
walled aluminum cans, as the laminate consists of metal layer and  
plastic layer. The strengthening material has inherent ability to  
resist stress or the ability may be realized when used in conjunction  
with metal layer.

pp; 25 DwgNo 0/0

Technology Focus:

TECHNOLOGY FOCUS - POLYMERS - Preferred Material: The plastic layer

comprises a material selected from polyester, polypropylene, acetonitrile-styrene copolymer, high impact styrene, **nylon** and polyacetal, optionally reinforced with a material chosen from carbon fibers, filaments of glass, metal, boron, aluminum silicate, calcium carbonate, talc and barium sulfate.

INORGANIC CHEMISTRY - Preferred Metal: The metal layer comprises a metal chosen from aluminum, brass, copper, chromium, iron, tin and steel. The laminate alternately comprises a strengthening material layer containing a strengthening material chosen from aluminum, brass, copper, chromium, chromium oxide, iron, tin and steel.

ORGANIC CHEMISTRY - Preferred Formulation: The canister contains a formulation containing medicament and hydrofluoroalkane propellant. The propellant is chosen from 1,1,1,2-tetrafluoroethane and/or 1,1,1,2,3,3,3-heptafluoro-n-propane. The medicament is chosen from fluticasone propionate, beclomethasone dipropionate, salmeterol, albuterol, salts and/or solvates, preferably fluticasone propionate in combination with salmeterol xinafoate

Derwent Class: A92; B07; G04; P34; Q34

International Patent Class (Main): B65D-083/38

International Patent Class (Additional): **A61M-015/00**

10/34/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014745769 \*\*Image available\*\*

WPI Acc No: 2002-566476/200260

Medicament dispenser for metered dose inhaler, has metering valve whose internal metal surfaces are coated with specific material

Patent Assignee: GLAXO GROUP LTD (GLAX ); OTTOLANGUI D M (OTTO-I)

Inventor: OTTOLANGUI D M

Number of Countries: 098 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200230498	A1	20020418	WO 2001EP11095	A	20010926	200260 B
AU 200223562	A	20020422	AU 200223562	A	20010926	200260
EP 1324796	A1	20030709	EP 2001986613	A	20010926	200345
			WO 2001EP11095	A	20010926	
US 20040035417	A1	20040226	WO 2001EP11095	A	20010926	200416
			US 2003399158	A	20030814	
JP 2004510557	W	20040408	WO 2001EP11095	A	20010926	200425
			JP 2002533936	A	20010926	

Priority Applications (No Type Date): GB 200025092 A 20001013

Patent Details:

Patent No. Kind Lan Pg Main IPC Filing Notes

WO 200230498 A1 E 33 A61M-015/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200223562 A A61M-015/00 Based on patent WO 200230498

EP 1324796 A1 E A61M-015/00 Based on patent WO 200230498

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

US 20040035417 A1 A62B-007/00

Serial 10/617850

April 30, 2004

JP 2004510557 W 51 A61M-015/00 Based on patent WO 200230498

Abstract (Basic): WO 200230498 A1

NOVELTY - A canister houses the medicament. The internal metal surfaces of a metering valve made of metal is coated to enhance the surface energy. The coating comprises a polymeric material, a phosphate based perfluoroether derivative, a silane derivative of perfluoropolyoxyalkane, and a siloxane polymer.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Metering valve;
- (2) Metered dose **inhaler** ; and
- (3) Drug deposition prevention method in dispenser.

USE - This medicament dispenser is used for dispensing medicament in fluid propellant, and also for use in metered dose **inhaler** (MDI) for rapid treatment of respiratory and nose disorders.

ADVANTAGE - The coating enhances the surface energy of the internal metal surfaces of the valve. Hence, the tendency of the drug to adhere to the metal surfaces is reduced and the frictional properties are improved.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic representation of the metering valve of medicament dispenser.

pp; 33 DwgNo 1/1

Technology Focus:

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: The internal metal surfaces of metering valve is coated with polymer selected from the group of fluoropolymer consisting of polytetrafluoroethylene (PTFE), ethylenetetrafluoroethylene (ETFE), polyvinylidene fluoride (PVDF), perfluoroalkoxyalkane (PFA), polyvinyl fluoride (PVF), polychlorotrifluoroethylene (PCTFE) and fluorinated ethylenepropylene (FEP). Copolymer of fluoropolymer selected from group of **polyamides**, polyimides, polyethersulfones, polyphenylene sulfides and amine-formaldehyde thermosetting resins.

METALLURGY - Preferred Device: The metering valve is made of metal selected from the group of stainless steel, aluminum, copper, tin and any alloys

Derwent Class: A96; B07; P34; P35; Q34; Q66

International Patent Class (Main): **A61M-015/00** ; A62B-007/00

International Patent Class (Additional): B65D-083/14; F16K-021/00

10/34/3 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014698412 \*\*Image available\*\*

WPI Acc No: 2002-519116/200255

**Medicament dispenser for inhalation therapy, has canister to which drug dispensing valve and dessicant are integrated**

Patent Assignee: GLAXO GROUP LTD (GLAX )

Inventor: JOHNSON P; OTTOLANGUI D M

Number of Countries: 098 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200230499	A2	20020418	WO 2001EP11098	A	20010926	200255	B
AU 200215902	A	20020422	AU 200215902	A	20010926	200255	
EP 1324797	A2	20030709	EP 2001986614	A	20010926	200345	
			WO 2001EP11098	A	20010926		
JP 2004510558	W	20040408	WO 2001EP11098	A	20010926	200425	

JP 2002533937 A 20010926

Priority Applications (No Type Date): GB 200116891 A 20010711; GB 200025092  
A 20001013

## Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200230499 A2 E 29 A61M-015/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200215902 A A61M-015/00 Based on patent WO 200230499

EP 1324797 A2 E A61M-015/00 Based on patent WO 200230499

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

JP 2004510558 W 51 A61M-015/00 Based on patent WO 200230499

Abstract (Basic): WO 200230499 A2

NOVELTY - A dispenser for dispensing medicament in a fluid propellant comprises a canister to which a drug dispensing valve made substantially of metal, and a water absorbing unit are integrated.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Drug dispensing valve;
- (2) Metered dose inhaler ;
- (3) Canister;
- (4) Moisture prevention method; and
- (5) Respiratory disorder treatment method.

USE - For dispensing medicament used for treatment of mild, moderate or severe acute, chronic symptoms, prophylactic treatment, respiratory disorders such as asthma in inhalation therapy.

ADVANTAGE - Prevents moisture increase in drug formulations stored in the dispensers, thereby reducing cost and complex manufacturing process.

DESCRIPTION OF DRAWING(S) - The figure shows the graph drawn between the moisture content and time interval.

pp; 29 DwgNo 3/3

## Technology Focus:

TECHNOLOGY FOCUS - POLYMERS - Preferred Dessicant: The water absorbing unit is made from a material that is a dessicant. The dessicant is a **polyamide**.

INORGANIC CHEMISTRY - Preferred Dessicant: The dessicant is selected from silica gel dessicant, zeolite, alumina, bauxite, anhydrous calcium sulfate, water absorbing clay, activated bentonite clay and molecular sieve

Derwent Class: A92; A96; B07; P34; Q34; Q66

International Patent Class (Main): **A61M-015/00**

International Patent Class (Additional): B65D-083/14

10/34/4 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014581021 \*\*Image available\*\*

WPI Acc No: 2002-401725/200243

Container storage apparatus comprises drug formulation containing hydro fluoroalkane propellant in pressurized container and pouch

Patent Assignee: GLAXO GROUP LTD (GLAX ); HERMAN C S (HERM-I); WALKER R I (WALK-I); SMITHKLINE BEECHAM CORP (SMIK )

Inventor: GARRILL K A; HAAN R J; HERMAN C S; WALKER R I

Number of Countries: 097 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6315112	B1	20011113	US 98216183	A	19981218	200243 B
			US 99290351	A	19990412	
			US 2000571388	A	20000515	
			US 2000599746	A	20000622	
AU 200161605	A	20011126	AU 200161605	A	20010515	200244
AU 200172971	A	20020102	AU 200172971	A	20010622	200244
WO 200187392	A2	20011122	WO 2001US15632	A	20010515	200244
WO 200198176	A2	20011227	WO 2001US19906	A	20010622	200244
EP 1284772	A2	20030226	EP 2001935515	A	20010515	200319
			WO 2001US15632	A	20010515	
JP 2003533295	W	20031111	JP 2001583856	A	20010515	200375
			WO 2001US15632	A	20010515	

Priority Applications (No Type Date): US 2000599746 A 20000622; US 98216183 A 19981218; US 99290351 A 19990412; US 2000571388 A 20000515

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6315112	B1	14	B65D-030/02		CIP of application US 98216183 CIP of application US 99290351 CIP of application US 2000571388 CIP of patent US 6119853 CIP of patent US 6179118
AU 200161605	A		A61M-015/00		Based on patent WO 200187392
AU 200172971	A		B65D-081/26		Based on patent WO 200198176
WO 200187392	A2 E		A61M-015/00		
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
WO 200198176	A2 E		B65D-081/26		
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
EP 1284772	A2 E		A61M-015/00		Based on patent WO 200187392
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2003533295	W	42	A61M-015/00		Based on patent WO 200187392

Abstract (Basic): US 6315112 B1

NOVELTY - Container storage apparatus comprises a drug formulation having drug and/or hydro fluoroalkane propellant, a pressurized container filled with drug formulation and a pouch constructed from materials comprising a metallic foil layer and a moisture absorbing material (50).

USE - Used for storing a pressurized container.

ADVANTAGE - The apparatus prevents ingress of water vapor and particulate material into the package (22) while permitting egression

of the propellant to increase shelf life and performance of the drug and the propellant. It is also cost effective and does not require complex manufacturing processes and it efficiently envelopes the container to maximize available storage space.

DESCRIPTION OF DRAWING(S) - The figure shows a cutaway bottom view of a container package system.

Package (22)

Container (34)

Moisture absorbing material (50)

pp; 14 DwgNo 3/6

Technology Focus:

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Drugs: The drug is albuterol sulfate.

POLYMERS - Preferred Materials: The moisture absorbing material is a desiccant, preferably Nylon .

INORGANIC CHEMISTRY - Preferred Components: The metallic foil is aluminum. The desiccant comprises silica gel, alumina, bauxite, anhydrous, calcium sulfate, water absorbing clay, activated bentonite clay, and/or a molecular sieve zeolite. The aluminum foil has a thickness of 9-25 (preferably 12.7) mum.

MECHANICAL ENGINEERING - Preferred Apparatus: The pressurized container (34) is a metered dose inhaler . The pouch is impregnated with the desiccant. The desiccant is in the form of a coating, lining, film or mesh. The pouch also includes a one-way valve to permit any propellant leaking from the pressurized container to egress from the pouch. It is also vacuum sealed and is purged with nitrogen gas. The apparatus also comprises a second desiccant within the pouch.

ORGANIC CHEMISTRY - Preferred Components: The IHIA (sic) propellant is 134a

Derwent Class: A96; B07; P34; Q32; Q34

International Patent Class (Main): A61M-015/00 ; B65D-030/02; B65D-081/26

International Patent Class (Additional): B65D-075/00; B65D-077/00;

B65D-077/04; B65D-081/00; B65D-081/20; B65D-083/34; B65D-083/36

10/34/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014234963 \*\*Image available\*\*

WPI Acc No: 2002-055661/200207

Overcap for aerosol metered dose inhaler, comprises outer housing fitted with moisture absorber structure having fitment housing containing desiccant

Patent Assignee: GLAXO GROUP LTD (GLAX ); HAAN R J (HAAN-I); HERMAN C S

(HERM-I); PISCULLI V P (PISC-I)

Inventor: HERMAN C S; PISCULLI V P; ASHURST I C; HAAN R J

Number of Countries: 096 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200187731	A2	20011122	WO 2001US15551	A	20010515	200207 B
AU 200164594	A	20011126	AU 200164594	A	20010515	200222
US 20030051727	A1	20030320	WO 2001US15551	A	20010515	200323
			US 2002275229	A	20021104	
EP 1353854	A2	20031022	EP 2001939031	A	20010515	200370
			WO 2001US15551	A	20010515	
JP 2004501032	W	20040115	JP 2001584137	A	20010515	200410
			WO 2001US15551	A	20010515	

Priority Applications (No Type Date): US 2000204252 P 20000515; US

2002275229 A 20021104

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200187731 A2 E 8 B65D-051/30

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS  
JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL  
PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200164594 A B65D-051/30 Based on patent WO 200187731

US 20030051727 A1 A45C-011/04

EP 1353854 A2 E B65D-051/30 Based on patent WO 200187731

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI  
LU MC NL PT SE TR

JP 2004501032 W 21 B65D-051/30 Based on patent WO 200187731

Abstract (Basic): WO 200187731 A2

NOVELTY - An overcap comprises an outer housing (26) fitted with a moisture absorber structure (28). The moisture absorber structure has a fitment housing (31) containing a desiccant (30).

USE - For use in aerosol metered dose **inhaler**.

ADVANTAGE - The inventive overcap improves the operation of metered dose **inhaler** by reducing moisture ingress. It is simple, efficient to manufacture, and smaller and less bulky than other secondary packaging systems.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional, cut-away view of the overcap.

Metered dose **inhaler** (12)

Sealant (14)

Valve stem (16)

Ferrule (18)

Valve housing (20)

Neck (22)

Outer housing (26)

Moisture absorber structure (28)

Desiccant (30)

Fitment housing (31)

Moisture permeable material (32)

Radially oriented fin (36)

pp; 8 DwgNo 1/1

Technology Focus:

TECHNOLOGY FOCUS - MECHANICAL ENGINEERING - Preferred Components:

The fitment housing includes a radially oriented fin(s) (36), preferably circumferential fins. A metered dose **inhaler** (12) containing albuterol sulfate is connected to the outer housing by a sealant (14). The sealant provides a hermetic seal between the metered dose **inhaler** and the outer housing. It can be a foil label having a thickness of 9-20 mum. The foil label is a structural laminate comprising an oriented **polyamide** layer, an aluminum foil layer, and a pressure sensitive adhesive. A valve stem (16), a ferrule (18), a valve housing (20) and neck (22) are contained and sealed within the outer housing.

POLYMERS - Preferred Materials: The outer housing is made of injection moldable plastic (preferably polypropylene). The fitment housing is made of a radially oriented material connected to a moisture permeable material (32). The radially oriented material can also be

injection moldable plastic (preferably polypropylene). The moisture permeable material is fiberboard or TYVEK. The sealant is made of an epoxy material.

INORGANIC CHEMISTRY - Preferred Material: The desiccant comprises granular silica gel (2-10 g  
Derwent Class: A96; B07; P24; P34; Q33; Q34; Q69  
International Patent Class (Main): A45C-011/04; B65D-051/30  
International Patent Class (Additional): A61M-015/00 ; A61M-016/00 ;  
B65D-081/26; B65D-083/14; F17C-011/00

10/34/7 (Item 7 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014055980

WPI Acc No: 2001-540193/200160

Metered dose inhaler for dispensing an inhalation drug has a part or all of its internal surfaces coated with a polymer blend comprising at least one fluorocarbon polymer in combination with at least one non-fluorocarbon polymer

Patent Assignee: GLAXO GROUP LTD (GLAX ); GLAXO WELLCOME INC (GLAX )

Inventor: BRITTO I L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6253762	B1	20010703	US 95422111	A	19950414	200160 B
			US 96584859	A	19960105	
			WO 96US5006	A	19960410	
			US 97829562	A	19970331	
			US 97829562	A	19970331	

Priority Applications (No Type Date): US 97829562 A 19970331; US 95422111 A 19950414; US 96584859 A 19960105; WO 96US5006 A 19960410

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6253762	B1	10	A61M-011/00	CIP of application US 95422111 CIP of application US 96584859 Cont of application WO 96US5006 CIP of application US 97829562

Abstract (Basic): US 6253762 B1

NOVELTY - A metered dose **inhaler** (A) containing an inhalation drug formulation (a) has a part or all of its internal surfaces coated with a polymer blend comprising at least one fluorocarbon polymer in combination with at least one non-fluorocarbon polymer. (a) comprises a fluticasone propionate or its salt and a fluorocarbon propellant.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) a metered dose **inhaler** system comprising (A) is fitted into a channeling device for oral or nasal inhalation of (a); and

(2) treatment of a respiratory disorder or delivering (a) to a patient involving administering an aerosol composition from the system or from (A) to a patient respectively.

USE - For dispensing an inhalation drug formulation by an oral or nasal inhalation to a patient suffering from a respiratory disorder (claimed) and nasal disorder.

ADVANTAGE - The coating with a polymeric blend significantly reduces or eliminates the problem of adhesion or deposition of fluticasone propionate on the can walls and thus ensures consistent



delivery of medication in aerosol from the **inhaler** .

pp; 10 DwgNo 0/1

Technology Focus:

**TECHNOLOGY FOCUS - POLYMERS - Preferred Components:** The fluorocarbon polymer is a perfluorocarbon polymer (preferably polytetrafluoroethylene, polyfluoroalkoxy fluorocarbon polymer and/or fluorinated ethylene propylene copolymer (especially polytetrafluoroethylene) and comprises at least one monomeric unit. The non-fluorocarbon polymer is a **polyamide** , a polyimide, a polyamideimide, a polyethersulfone, a polyphenylene sulfide or an amine-formaldehyde thermosetting resin (preferably polyamideimide or polyethersulfone, especially polyethersulfone). The blend comprises polytetrafluoroethylene or polyethersulfone.

**Preferred Inhaler :** (A) comprises a can having a mouth, a cap covering the mouth and a drug metering valve situated in the cap and a ellipsoidal base. The thickness of the coating is 1 microm - 1 mm (preferably 1 - 100, especially 1 - 25 microm).

**Preferred Method:** The coating is applied by spray coating the blend on the internal metallic surface of the preformed can and curing the coating of the blend after it is sprayed. A primer layer is optionally interposed between the coating and the internal surface of the can.

**ORGANIC CHEMISTRY - Preferred Composition:** (a) preferably comprises the fluticasone propionate or its solvate (0.005 - 10 wt.%) in combination with a bronchodilator steroid; an antiallergic or beclomethasone dipropionate and the propellant and further comprises an optional surfactant and a polar cosolvent (0.01 - 5 w/w % based upon the propellant). The fluticasone propionate or its solvate has a particle size of less than 100 micro.

**Preferred Components:** The monomeric unit is selected from tetrafluoroethylene, hexafluoropropylene, perfluoroalkoxyalkylene or vinylidene fluoride (preferably perfluoroalkoxyalkylene, especially perfluorinated ethylene propylene). The fluorocarbon propellant is 1,1,1,2-tetrafluoroethane and/or 1,1,1,2,3,3,3,-heptafluoro-propane (preferably 1,1,1,2-tetrafluoroethane or 1,1,1,2,3,3,3-heptafluoro-n-propane). The bronchodilator is a salmeterol (preferably salmeterol xinafoate).

**METALLURGY -** The can is made of a metal (preferably Al or its alloy  
Extension Abstract:

**ADMINISTRATION -** The method of inhalation of (a) is oral or nasal.

**EXAMPLE -** A standard metered dose **inhaler** (MDI) can (12.5 ml) was spray-coated with Du Pont (polytetrafluoroethylene-polyethersulfone blend) as a single coat and cured. The thickness of the coating was approximately 1 - 20 microm. The can was then purged of air, the valves crimped in a place and a suspension of micronised fluticasone propionate (about 41.0, 21, 8.8 or 4.4 mg) in P134a (12 g) was filled through the valve. A control MDI contained uncoated can. Both the MDIs were tested for dose delivery under simulated use conditions. It was found that dose delivery from the test MDI was constant as compared to the control filled, which exhibited a significant decrease in dose delivered through use.

Derwent Class: A96; B01; B07; P34

International Patent Class (Main): **A61M-011/00**

10/34/8 (Item 8 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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Serial 10/617850

April 30, 2004

013760497      \*\*Image available\*\*

WPI Acc No: 2001-244709/200125

Pressure actuated valve for closing off and controlling the fluid flow in a fluid dispensing system used in medical devices, drug delivery devices, food dispensing, or aerosol generation, comprises porous media

Patent Assignee: SHEFFIELD PHARM INC (SHEF-N)

Inventor: ARMER T A; PAVKOV R M

Number of Countries: 094    Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200119438	A1	20010322	WO 2000US25145	A	20000913	200125 B
AU 200074842	A	20010417	AU 200074842	A	20000913	200140
EP 1212112	A1	20020612	EP 2000963427	A	20000913	200239
			WO 2000US25145	A	20000913	
NO 200201194	A	20020311	WO 2000US25145	A	20000913	200239
			NO 20021194	A	20020311	
KR 2002059396	A	20020712	KR 2002703203	A	20020311	200306
CN 1373678	A	20021009	CN 2000812779	A	20000913	200309
JP 2003509629	W	20030311	WO 2000US25145	A	20000913	200319
			JP 2001523065	A	20000913	

Priority Applications (No Type Date): US 99153647 P 19990913

Patent Details:

Patent No    Kind    Lan    Pg    Main    IPC    Filing    Notes

WO 200119438    A1    E    36    A61M-015/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200074842    A                    A61M-015/00    Based on patent WO 200119438

EP 1212112    A1    E                    A61M-015/00    Based on patent WO 200119438

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

NO 200201194    A                    A61M-015/00

KR 2002059396    A                    A61M-015/00

CN 1373678    A                    A61M-015/00

JP 2003509629    W                    33    F16L-055/00    Based on patent WO 200119438

Abstract (Basic): WO 200119438 A1

NOVELTY - A pressure actuated valve (18) comprises a porous media.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of dispensing a fluid in a fluid dispensing device comprising applying a predetermined activation pressure across the porous media, dispensing a medicament on the aerosol generation surface, and entraining aerosolized particles generated by the surface into the airflow.

USE - For closing off and controlling the fluid flow in a fluid dispensing system used in medical devices, drug delivery devices, food dispensing, or aerosol generation.

ADVANTAGE - The valve yields increased efficiency of a fluid dispensing system, delivers the fluid more consistent and uniform to aerosolizer mechanism of an **inhaler** device (piezoelectric horn), lowers evaporative losses by 60%, enhances metering accuracy by 4%, and is relatively low in cost.

DESCRIPTION OF DRAWING(S) - The figure shows a view of the porous valve.

Pressure actuated valve (18)  
pp; 36. DwgNo 6/12

Technology Focus:

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred

Component: The valve provides fluid to an aerosol generation surface. The pressure drop at predetermined value is applied to the outlet that causes fluid to flow from the reservoir and through the porous media. It is determined by a pore volume or size, or hydrophilic/hydrophobic balance of the media. The media acts as a filtration element and inhibits seepage of fluid from the reservoir. A fluid conveyance channel has an internal channel and outlet positioned above an aerosol generation surface and an inlet in fluid communication with a fluid reservoir.

POLYMERS - Preferred Component: The porous media comprises a porous plastic, preferably polysulfone, polyether sulfone, cellulose acetate, **nylon**, polytetrafluoroethylene, or polyolefin.

Preferred Properties: The porous plastic has a pore size of 0.15-0.8 microm. The porous media minimize evaporation and contamination of fluid from the reservoir

Derwent Class: A96; B07; P34; P42; Q67

International Patent Class (Main): **A61M-015/00** ; F16L-055/00

International Patent Class (Additional): **A61M-011/02** ; B01D-061/16;  
B01D-071/16; B01D-071/26; B01D-071/36; B01D-071/64; B01D-071/68;  
B01J-004/00; B05B-001/32

10/34/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013654574 \*\*Image available\*\*

WPI Acc No: 2001-138786/200115

Nose clear inhaler with water in a bottom block includes two nylon or plastics halves and a transformer in the bottom block

Patent Assignee: LOPES MAIOR E (MAIO-I)

Inventor: LOPES MAIOR E

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
BR 9903063	A	20010123	BR 993063	A	19990618	200115 B

Priority Applications (No Type Date): BR 993063 A 19990618

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
BR 9903063	A	1	A61M-015/08	

Abstract (Basic): BR 9903063 A

NOVELTY - The nose clear **inhaler** with water in a bottom block has two injection moulded bonding elements (1,2) with egress of water vapor via the top of funnel (1) of 35degrees. Block (2) collects the vapor, and the user receives only the inhalation gas, whose vaporization point is well below that of the water vapor.

USE - In medical equipment design. EMBODIMENT - A compartment (3) in block (2), level with the water in this, supplements a wire in funnel (1) powering a transformer made as two superposed bent sheets insulated by four plastics elements.

pp; 1 DwgNo 1/1

Derwent Class: A96; P34

International Patent Class (Main): **A61M-015/08**

Serial 10/617850

April 30, 2004

10/34/10 (Item 10 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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013371512 \*\*Image available\*\*

WPI Acc No: 2000-543451/200049

Medicament cartridge for inhaler has medicament retainers or doses arranged in concentric circular path on carrier

Patent Assignee: GLAXO GROUP LTD (GLAX ); SMITHKLINE BEECHAM CORP (SMIK )

Inventor: ANDERSON G J M; RAND P K

Number of Countries: 091 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200045879	A1	20000810	WO 99EP9615	A	19991208	200049 B
AU 200019724	A	20000825	AU 200019724	A	19991208	200059
EP 1148906	A1	20011031	EP 99963419	A	19991208	200172
			WO 99EP9615	A	19991208	
JP 2002536080	W	20021029	WO 99EP9615	A	19991208	200274
			JP 2000596998	A	19991208	
US 6679254	B1	20040120	WO 99EP9615	A	19991208	200407
			US 2001890727	A	20011017	

Priority Applications (No Type Date): GB 992493 A 19990205

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200045879 A1 E 35 A61M-015/00

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

AU 200019724 A A61M-015/00 Based on patent WO 200045879

EP 1148906 A1 E A61M-015/00 Based on patent WO 200045879

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

JP 2002536080 W 37 A61M-015/00 Based on patent WO 200045879

US 6679254 B1 A61M-015/00 Based on patent WO 200045879

Abstract (Basic): WO 200045879 A1

NOVELTY - A medicament cartridge has medicament retainers or doses arranged in a concentric circular path on a carrier.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following: (a) An **inhaler** has a housing with an airway extending between an inlet and an outlet, a medicament carrier as above and either a device for moving the carrier relative to the housing or an actuator for progressively unsealing each retainer. Preferred Features: Each retainer may have an individual sealing gasket.USE - Medication **inhaler** fro bronchodilation therapy, etc.

ADVANTAGE - The cartridge can house more doses.

DESCRIPTION OF DRAWING(S) - The drawing shows a medicament cartridge

outer ring (110)

inner ring (112)

medicament retaining cavities (114,115)

central mounting disc (116)

bottom cover (120)

peripheral walls (122)

mounting peg (126)

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top cover (130)  
 exit slit (132)  
 pp; 35 DwgNo 8/10

## Technology Focus:

TECHNOLOGY FOCUS - POLYMERS - The gasket may be of rubber, neoprene, polyester, polyethylene, polycarbonate, polyacetal, polytetrafluoroethylene or nylon .

Derwent Class: A96; B07; P34; P42; Q34

International Patent Class (Main): A61M-015/00

International Patent Class (Additional): A61M-016/00 ; B05D-007/14;  
 B65D-083/06

10/34/11 (Item 11 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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010034992 \*\*Image available\*\*

WPI Acc No: 1994-302705/199437

Dry powder medicament carrier for breath-activated inhaler - carries  
 powder in interstices for removal by air throughflow

Patent Assignee: GLAXO WELLCOME INC (GLAX ); TENAX CORP (TENA-N)

Inventor: KARG J; MULHAUSER P; KARG J A

Number of Countries: 029 Number of Patents: 016

## Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9420164	A1	19940915	WO 94US1852	A	19940228	199437 B
AU 9462701	A	19940926	AU 9462701	A	19940228	199503
NO 9503388	A	19950829	WO 94US1852	A	19940228	199546
			NO 953388	A	19950829	
FI 9504098	A	19950901	WO 94US1852	A	19940228	199548
			FI 954098	A	19950901	
US 5460173	A	19951024	US 9325964	A	19930303	199548
			US 94218031	A	19940325	
EP 691864	A1	19960117	EP 94910147	A	19940228	199608
			WO 94US1852	A	19940228	
BR 9405842	A	19960116	BR 945842	A	19940228	199611
			WO 94US1852	A	19940228	
EP 691864	A4	19960703	EP 94910147	A		199644
JP 8507452	W	19960813	JP 94520019	A	19940228	199702
			WO 94US1852	A	19940228	
CN 1119833	A	19960403	CN 94191376	A	19940228	199744
NZ 262807	A	19971124	NZ 262807	A	19940228	199802
			WO 94US1852	A	19940228	
AU 684754	B	19980108	AU 9462701	A	19940228	199810
HU 76900	T	19971229	WO 94US1852	A	19940228	199819
			HU 952612	A	19940228	
HU 216405	B	19990628	WO 94US1852	A	19940228	199931
			HU 952612	A	19940228	
CA 2157584	C	19990504	CA 2157584	A	19940228	199936
			WO 94US1852	A	19940228	
MX 193929	B	19991105	MX 941584	A	19940302	200106

Priority Applications (No Type Date): US 9325964 A 19930303; US 94218031 A 19940325

Cited Patents: EP 69715; FR 2667790; US 480505; DE 4142238; EP 520440

## Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
WO 9420164	A1	22	A61M-015/00	

Designated States (National): AU BR CA CN FI HU JP KR NO NZ

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL  
PT SE

AU 9462701 A A61M-015/00 Based on patent WO 9420164

NO 9503388 A A61M-015/00

FI 9504098 A A61M-000/00

US 5460173 A 7 A61M-015/00 Cont of application US 9325964

EP 691864 A1 E A61M-015/00 Based on patent WO 9420164

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC  
NL PT SE

BR 9405842 A A61M-015/00 Based on patent WO 9420164

EP 691864 A4 A61M-015/00

JP 8507452 W 14 A61M-013/00 Based on patent WO 9420164

CN 1119833 A A61M-015/00

NZ 262807 A A61M-015/00 Based on patent WO 9420164

AU 684754 B A61M-015/00 Previous Publ. patent AU 9462701

HU 76900 T A61M-015/00 Based on patent WO 9420164

HU 216405 B A61M-015/00 Based on patent WO 9420164

Previous Publ. patent HU 76900

Based on patent WO 9420164

CA 2157584 C E A61M-015/00 Based on patent WO 9420164

MX 193929 B A61M-015/000

Abstract (Basic): WO 9420164 A

A medicament carrier for a dry powder breath-activated **inhaler** has one part with a medicament dose embedded in interstices (12) and across and spanning the space between interstices to be entrained with an air flow through the part. The carrier is pref. made of silkscreen material, metal, ceramic or woven or nonwoven fibres.

The interstices are pref. 0.004-0.125 inch square and larger than the space between them and the embedded dose is 0.030-0.250 inch in diameter and 0.002-0.1 inch thick. Pref. multiple doses are embedded at spaced locations along the carrier periphery.

USE/ADVANTAGE - Partic. for asthma and respiratory track disease drugs such as salmeterol hydronaphthate. Allows a precise dose to be administered in optimum particle size and without the use of propellants.

Dwg.1/5

Abstract (Equivalent): US 5460173 A

A medicament carrier for a breath-activated powder **inhaler** has separate doses (16) of powder embedded in spaced peripheral interstices (12). Each dose extends across and spans the space between a number of interstices and can be entrained in an air flow passed only through that part of the carrier.

The carrier may be of silkscreen material, metal, ceramic, or woven or nonwoven fibres, e.g. of **polyamide**, polyolefin or polyester. The interstices are pref. 0.004-0.125 inch square, of uniform cross-section and are larger than the spaces between them. Each dose is pref. 0.030-0.250 inch in diameter and 0.002-0.1 inch thick.

USE/ADVANTAGE - For drugs to treat asthma and other respiratory diseases, e.g. salmeterol hydronaphthoate. Provides an accurate dose with particles of optimum size.

(Dwg.2A/5)

Derwent Class: B07; P33; P34; P42; Q34

International Patent Class (Main): A61M-000/00 ; A61M-013/00 ;  
A61M-015/00 ; A61M-015/000

International Patent Class (Additional): A61J-003/00; A61M-016/00 ;

A61M-016/000 ; B05B-007/14; B05D-007/14; B65D-083/006; B65D-083/06

10/34/12 (Item 12 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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008461558 \*\*Image available\*\*

WPI Acc No: 1990-348558/199046

Flexible container for portable breathing appts. - comprising hose having expanded sections and narrow sections bent concertina fashion

Patent Assignee: SCHOLLEY F G (SCHO-I)

Inventor: SCHOLLEY F G

Number of Countries: 032 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9012982	A	19901101				199046 B
AU 9055292	A	19901116				199107
US 5036845	A	19910806	US 90507484	A	19900411	199135
EP 467976	A	19920129	EP 90906694	A	19900413	199205

Priority Applications (No Type Date): US 90507484 A 19900411; US 89337901 A 19890414

Cited Patents: AU 483635; DE 971689; EP 167334; FR 2519904

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9012982 A

Designated States (National): AT AU BB BG BR CH DE DK FI GB HU JP KP KR LK LU MC MG MW NL NO RO SD SE SU

Designated States (Regional): AT BE CH DE DK ES FR GB IT LU OA SE

EP 467976 A

Designated States (Regional): AT BE CH DE ES FR GB IT LI LU NL SE

Abstract (Basic): WO 9012982 A

Flexible container for compressed gases comprises length of flexible hose (10) having liner (34) covered with flexible, high strength fibre (36) and outer, flexible, protective covering (38) over the fibre. The hose is bent to form a compact space-saving configuration of closely adjacent sections (12A-12F) and is fitted with a pressure valve (16), demand flow regulator (24), and **inhalator** (26).

The liner is pref. made of **nylon**, polyethylene, silicon, vinyl, rubber, PTFE, polypropylene, polyurethane, or soft metal. The fibre is aramid fibre, metal wire, fibreglass, carbon fibre, or graphite. The flexible protective coating is polyurethane, silicon, rubber, vinyl, vinylester, epoxy, or polyester resin. The fibre is in the form of a braid or a winding and the protective coating impregnates the interstices of the braid or winding as well as covering the fibre.

USE/ADVANTAGE - Container is designed to be light enough to be easily carried, strapped to the back of a wearer's body, to protrude only a small distance from the body, and to be highly flexible so as to match the contours of the body. Thus, it is suitable for use by divers, fire fighters, miners, etc. who require a portable supply of breathable gas which is easy to carry and can be used in confined spaces. (19pp Dwg.No.1/2

Abstract (Equivalent): US 5036845 A

A container for compressed gases, comprises: a) a length of hose including a liner; b) at least a substantial portion of the hose being of one piece and continuous and including alternating diameter and narrow-diameter sections; c) the expanded diameter sections having a cross-section substantially greater than the cross-section of the

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narrow-diameter sections, at least the narrow-diameter sections being flexible; d) means for reinforcing and protecting the length of the hose; e) the reinforcing and protective means including a flexible fibre of a material selected from the group consisting of aramid fibre, metal wire, fibreglass, carbon fibre and graphite.

(-pp)

Derwent Class: A92; K02; P34; P35; Q69

International Patent Class (Additional): A61M-016/08 ; A62B-007/02;

A62B-009/00; F17C-001/16

10/34/14 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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001993338

WPI Acc No: 1978-06351A/197804

Pharmaceutical or cosmetic vaporising spray, esp. nasal inhaler - has  
germicidal filter element fitted in air inlet passage

Patent Assignee: L'OREAL SA (OREA )

Number of Countries: 006 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
BE 856857	A	19780116				197804 B
DE 2746993	A	19780427				197818
FR 2368306	A	19780623				197829
US 4093124	A	19780606				197831
GB 1563749	A	19800326				198013
CH 617104	A	19800514				198024
DE 2746993	C	19900208				199006

Priority Applications (No Type Date): FR 7631523 A 19761020; FR 7524206 A 19750804

Abstract (Basic): BE 856857 A

In the parent patent the vaporiser comprises an elastically deformable, plastic bottle which is squeezed to deliver a vaporised spray through a nozzle on top of the bottle neck. When external pressure is released, the bottle regains its original shape by sucking in air through a non-return valve in the form of a flexible washer which can be pressure-displaced from a seating in the annular air inlet passage around the dip tube connection to the nozzle.

In this addn. the upstream side of the valve, the air inlet passage is fitted with a porous, filter element made of material which is unwettable by the sprayed liq. The element is pref. treated with a bactericide which does not react with and is insol. in the sprayed liq.

The element is pref. made of hydrophobic fibres e.g. of P.V.C., polyamide, polyester, polypropylene, polyacrylics.

Since all air which enters the vaporiser bottle is passed first through a filter element treated as required, there is no danger of germs being drawn into the spray liq. and subsequently applied to the user

Derwent Class: A96; B07; P24; P34; P42; Q32; Q34

International Patent Class (Additional): A45D-034/02; A61M-011/00 ;

B05B-011/04; B65D-001/32; B65D-083/14

10/34/15 (Item 15 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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000903077



WPI Acc No: 1972-63133T/197240

Dosed applicator for fluids - eg inhaler ,with a coiled plastic tube  
contg the individual dose

Patent Assignee: CIBA GEIGY AG (CIBA ); GELLER L (GELL-I)

Number of Countries: 010 Number of Patents: 012

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2212315	A					197240 B
NL 7203447	A					197241
BE 780686	A					197244
ZA 7201645	A					197252
FR 2130130	A					197306
DD 95557	A					197316
GB 1380350	A	19750115				197503
SU 428593	A	19750423				197537
CA 981638	A	19760113				197605
NL 149132	B	19760415				197620
DE 2212315	B	19770630				197727
CS 7201772	A	19800530				198032

Priority Applications (No Type Date): CH 713861 A 19710316

Abstract (Basic): DE 2212315 A

The individual dose receptacle consists of a coiled tube sealed at both ends and connected at one end to a discharge outlet and at the other end to the wall section of an applicator device which is connected to a propellant during use exercising a capillary effect on the fluid according to its viscosity to fix the fluid in the tube so that during manipulation before use a gas pocket remains between the fluid and the wall section preventing loss of the fluid. Pref. the dose receptacle consists of a polyethylene, polyamide, PTFE, glass or metal tube with  $\geq 2$  turns in it.

Derwent Class: A96; B07; P34; Q32; Q34; Q56; S02

International Patent Class (Additional): A61M-011/02 ; B65D-017/00;  
B65D-083/14; F04F-001/06; G01F-011/30

12/26, TI/1 (Item 1 from file: 350)

DIALOG(R) File 350: Derwent WPIX

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015961207

WPI Acc No: 2004-119048/200412

**Formulations containing interfering RNA, useful for e.g. treating cancer,  
for delivery by inhalation, percutaneously or by electroporation, or as  
coating on medical device**

12/26, TI/2 (Item 2 from file: 350)

DIALOG(R) File 350: Derwent WPIX

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015650254

WPI Acc No: 2003-712437/200367

**Hollow, microporous particle production, especially for use as inhalable  
medicament for treating respiratory disorders, by cooling mixture of active  
agent and blowing agent to form cracks then eliminating blowing agent**

12/26, TI/9 (Item 9 from file: 350)

DIALOG(R) File 350: Derwent WPIX

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000606504

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April 30, 2004

WPI Acc No: 1968-38861Q/196800

**Menthol inhaler which simulates a cigarette has a thin rigid tube with an internal supply of menthol and is provided with a mouth piece at one end and a simulat**

12/7,K/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

011269277 \*\*Image available\*\*

WPI Acc No: 1997-247180/199723

**Respirator mask coupling assembly - has outer guide surface and peripheral recess for seal giving simpler removal for cleaning**

Patent Assignee: COMASEC INT SA (COMA-N)

Inventor: BEREND C P

Number of Countries: 007 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 771577	A1	19970507	EP 96402326	A	19961031	199723 B
FR 2740689	A1	19970509	FR 9513011	A	19951103	199726
FR 2740690	A1	19970509	FR 9613348	A	19961031	199726

Priority Applications (No Type Date): FR 9513011 A 19951103

Cited Patents: DE 4220780; EP 311516; EP 511592; FR 1575820; US 5279286

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 771577	A1	F	13	A62B-018/08	
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Designated States (Regional): DE ES FR GB IT NL SE

FR 2740689	A1			A62B-018/08	
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FR 2740690	A1			A62B-018/08	
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Abstract (Basic): EP 771577 A

The coupling assembly (A), designed to fit into the front aperture (11) of a respirator mask (2), has a generally cylindrical outer guide surface (22) which lies perpendicular to its positioning surface and fits against a front shoulder (12) in the aperture (11) on the assembly. The guide surface also has a peripheral groove containing a seal (24), e.g. toroid in shape with a circular cross-section.

The assembly incorporates a respirator system (8) with at least one antechamber, an **inhaler** (26) and an exhalation valve (29). It can also have speech membrane (31) and/or a protective grille (32), which can form a one-piece unit with fixing elements, e.g. of a moulded synthetic material - a **polyamide** such as Noryl (RTM).

ADVANTAGE - Simpler removal, e.g. for cleaning, and replacement is obtained.

Dwg.1/6

Derwent Class: A23; A96; P35

International Patent Class (Main): A62B-018/08

International Patent Class (Additional): A42B-003/04; A62B-009/04;

A62B-017/04; A62B-018/00; A62B-018/02; A62B-018/04

12/7,K/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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010691374 \*\*Image available\*\*

WPI Acc No: 1996-188330/199619

**Pressurised aerosol can, partic. medicament inhaler - comprises dispensing valve and audible contents indicator**

Patent Assignee: MINNESOTA MINING &amp; MFG CO (MINN )

Inventor: HODSON P D; SMITH D K  
Number of Countries: 019 Number of Patents: 003  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9609229	A1	19960328	WO 95US10738	A	19950823	199619 B
AU 9533712	A	19960409	AU 9533712	A	19950823	199629
EP 782533	A1	19970709	EP 95930261	A	19950823	199732
			WO 95US10738	A	19950823	

Priority Applications (No Type Date): GB 9418870 A 19940919

Cited Patents: GB 2195544

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 9609229	A1	E	19	B65D-083/14	
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Designated States (National): AU CA NZ

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL  
PT SE

AU 9533712	A			B65D-083/14	Based on patent WO 9609229
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EP 782533	A1	E		B65D-083/14	Based on patent WO 9609229
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Designated States (Regional): DE FR GB

Abstract (Basic): WO 9609229 A

Aerosol dispenser comprises a can holding a pressurised compsn., a dispensing valve, and a contents indicator. When the dispenser is shaken the indicator produces an audible signal which differs, pref. by being much quieter or louder, when the amt. of compsn. is at or below a set level. The indicator may be a buoyant **polyamide** element which straddles the valve to limit its movement when the set level is reached and has a castellated or serrated flange (4) to strike the can wall. Alternatively, the indicator is a rattle formed as a metal ball in a buoyant cage, or a metal washer around the centre of a rubber dumbbell, or is a buoyant element in a fixed cage and striking only the cage until the set level is reached.

USE - The appts. is partic. useful as medication **inhalers** .

ADVANTAGE - The appts. clearly indicates when a container is nearly empty.

Dwg.4/9

Derwent Class: A96; B07; Q34

International Patent Class (Main): B65D-083/14

Serial 10/617850

April 30, 2004

File 348:EUROPEAN PATENTS 1978-2004/Apr W02

File 349:PCT FULLTEXT 1979-2002/UB=20040415,UT=20040408

Set	Items	Description
S1	9145	INHALER? ? OR INHALATOR? ? OR (INHALATION OR INHALING) () (D- EVICE? ? OR INSTRUMENT? ? OR PRODUCT? ?)
S2	284948	SPACER? ? OR CHAMBER? ?
S3	130656	BUILDUP? ? OR BUILD()UP? ? OR DEPOSIT? ?
S4	129320	POLYAMIDE? ? OR NYLON OR POLYMER??() (AMIDE OR AMIDES)
S5	32529	IC=A61M
S6	7	S1(S) S2(S) S4
S7	42	S1(S) S4
S8	819	S3(20N) S4
S9	7	S1(S) S8
S10	7	S9 NOT S6 [not relevant]
S11	2758	S4 AND S5
S12	7221	PREVENT?(2W) S3
S13	0	S12(S) S4 AND S5
S14	13	S3(S) S4 AND S5
S15	11	S14 NOT (S6 OR S9)
S16	80	S12(S) S4
S17	17	S12(20N) S4
S18	16	S17 NOT (S9 OR S6 OR S14) [not relevant]

6/3,AB,K/3 (Item 3 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00795360

**MULTIPLE DOSE DISPENSER FOR POWDER INHALATORS AND CORRESPONDING METHOD OF DISPENSATION**  
**DISTRIBUTEUR MULTIDOSE POUR INHALATEURS A POUDRE ET PROCEDE DE DISTRIBUTION CORRESPONDANT**

Patent Applicant/Assignee:

MEDIFRONT AB, Luntmakargatan 66, S-113 51 Stockholm, SE, SE (Residence),  
 SE (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

EWERLOF Goran, Stenbitsvagen 31, S-181 30 Lidingo, SE, SE (Residence), SE  
 (Nationality), (Designated only for: US)

GAWELL Nils, Drabantvagen 6B, S-181 65 Lidingo, SE, SE (Residence), SE  
 (Nationality), (Designated only for: US)

Legal Representative:

CONIMAR AB (agent), Gerhard MIKSCHKE, P.O. Box 2086, S-141 02 Huddinge, SE,  
 Patent and Priority Information (Country, Number, Date):

Patent: WO 200128617 A1 20010426 (WO 0128617)

Application: WO 2000SE2049 20001020 (PCT/WO SE0002049)

Priority Application: SE 993824 19991022

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ  
 DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ  
 LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG  
 SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
 (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
 (OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
 (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
 (EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 3542

English Abstract

A dispenser for a pulverous pharmaceutical composition for use with powder inhalators comprises a sealed housing (1) and a compartment (2) in the housing (1) for storing the composition. The storage compartment (2) further comprises an opening (5), a dispensing element (9) disposed in the storage compartment (2) and extending through the opening (5), an element (7) with a channel joined to the opening (5) externally of the compartment (2), and means for step-wise displacement of the dispensing element (9). The dispensing element (9) can be displaced towards the opening (9) and comprises sealing portions (14,14') of a diameter corresponding to the inner diameter of the channel spaced by dispensing portions (15) of substantially reduced diameter each of which holds a single dose of the composition.

Fulltext Availability: Claims

Claim

FIELD OF THE INVENTION

The present invention relates to a dispenser for a pulverous pharmaceutical composition or the like for use with powder **inhalators**, and a corresponding method of dispensation.

BACKGROUND OF THE INVENTION

The administration of pulverous pharmaceutical...  
...of patients suffering from  
asthma and other diseases is well known in the art. The  
**inhalators** used for dispensation may carry single or  
multiple doses of the composition. Multiple dosage  
**inhalators** are advantageous in terms of cost and  
convenience. A problem with such **inhalators** is the  
difficulty to reproducibly provide metered doses in a  
simple manner. This is due...  
...dispensation upon the compartment  
with the dose being moved in a dispensing position within  
the **inhalator** by, for instance, a drum turret mechanism.  
Another solution disclosed in the art is the provision of  
the dose in a gelatine capsule with which the **inhalator** is  
loaded. Prior to dispensation the capsule is cut with a  
knife to free its...  
...in the art comprises the provision of a bulk composition in a  
compartment of the **inhalator** from which aliquots are  
removed by a disk provided with dose **chambers** sliding past  
a window in the compartment wall, the doses in the  
**chambers** being exposed to an inhalation air flow in  
another portion of the **inhalator**. Still another solution  
disclosed in the art comprises a slightly compressed and  
therefore loosely cohering...  
...dispensing metered doses of a pulverous  
medicament stored in a sealed single compartment in an  
**inhalator** or the like.  
A further object of the invention is to provide a method of...  
...such way to a patient.  
Still another object of the invention is to provide an  
**inhalator** comprising a dispenser according to the  
invention. Further objects of the invention will become evident...  
...present invention is disclosed a  
dispenser for a pulverous pharmaceutical composition for  
use with powder **inhalators**, comprising a housing sealed  
from the environment and a storage compartment for storing

the composition...  
...provided a  
process for dispensation of multiple doses of a pulverous  
pharmaceutical composition in an **inhalator** , comprising:  
providing a pulverous pharmaceutical ...to form an aerosol  
for inhalation.  
According to the present invention is also provided an  
**inhalator** comprising the dispenser of the invention.  
According to the present invention is furthermore provided  
a...  
...of a patient by use of the  
dispenser according to the invention in an appropriate  
**inhalator** .  
SHORT DESCRIPTION OF THE DRAWINGS  
In the following the invention will be described in  
greater...  
...Fig. 3 a second embodiment of the dispenser according to  
the invention incorporated in an **inhalator** , in a  
partial view otherwise corresponding to the view  
of Fig. 1;  
Fig. 4. the...  
...The preferred embodiment of a dispenser for a pulverous  
pharmaceutical composition for use with powder **inhalators**  
shown in Fig. 1 comprises a housing 1 and a compartment 2  
for storage of...  
...filling it is  
permanently sealed with a plug 19. A bead chain 9 made of  
**nylon** is disposed in the composition storage compartment 2  
and extends from its outlet 5 opening...useful profiles.  
The process for dispensation of multiple doses of a  
pulverous medicament in an **inhalator** by the dispenser  
described in the foregoing comprises the following steps.  
The assembled dispenser is...  
...movement. The  
front end of the bead chain 9 can be rolled up within the  
**inhalator** by a mechanism (not shown) or the front end of  
the chain can be made to extend out of the **inhalator** to be  
drawn out step-wise by the patient against the resistance  
of the aforementioned snap mechanism.  
The dispenser of the invention can be easily adapted to  
fit various **inhalators** of known design. It is a sort of  
medicament magazine or cartridge for powder **inhalators** the  
useful life of which thereby can be substantially  
extended. Since there is only one...  
...invention is shown in Figs. 3 In this embodiment the  
dispenser is integrated in an **inhalator** which resembles a  
pen and can be unobtrusively carried by the patient. Same  
reference numbers...  
...wise displacement of the dispensing element is not shown in  
Figs. 4 and 5. The **inhalator** comprises a mouthpiece 138  
with an opening 137 narrowing in the direction of the passage...

**VALVE FOR AEROSOL CONTAINER**

**SOUPAPE POUR RECIPIENT DIFFUSEUR D'AEROSOL**

Patent Applicant/Assignee:

GLAXO GROUP LIMITED,  
RIEBE Michael Thomas,  
SCHULZE Mark Douglas,

Inventor(s):

RIEBE Michael Thomas,  
SCHULZE Mark Douglas,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9947195 A1 19990923

Application: WO 99EP1757 19990317 (PCT/WO EP9901757)

Priority Application: GB 985938 19980319

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE

ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT  
LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT  
UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD  
RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF  
CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 4978

English Abstract

The invention provides a valve for an aerosol container suitable for use in dispensing a quantity of the contents thereof. The valve components comprise a fluorinated polymer and/or a fluorinated coating which have been found to reduce drug deposition in the valve.

Fulltext Availability: Detailed Description

Detailed Description

... EOU interior valve deposition and dosing profile on valves was investigated with different polymer metering **chambers**. Fluticasone Propionate/Propellant HFA134a **Inhalers**, 50 microgram, 120 actuation were manufactured using the DF60 valve (acetal components, different polymer metering **chambers** and **nylon** ring). The **inhalers** were stored for a minimum of 2 weeks before analysis of the drug deposited on...

6/3,AB,K/6 (Item 6 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00293566

**DRY POWDER INHALER WITH AN INHALATION-ACTIVATED PISTON**

**INHALATEUR DE POUDRE SECHE A PISTON ACTIVE PAR INHALATION**

Patent Applicant/Assignee:

TENAX CORPORATION,

Inventor(s):

MULHAUSER Paul,  
KARG Jeffrey,  
FOXEN Thomas,  
BROOKS Christopher,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9511715 A1 19950504

Application: WO 94US5021 19940506 (PCT/WO US9405021)

Priority Application: US 93143182 19931026

Designated States: AU BR CA CN FI HU JP KR NO NZ AT BE CH DE DK ES FR GB GR

IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 7881

## English Abstract

A dry powder **inhalator** (20) for delivering a precise dose of a medicament contains a mesh disc (10) impregnated with a series of spaced, medicament doses (16) about the disc periphery. The **inhalator** (20) is armed by manually retracting a finger-pull (54) extending downwardly from the bottom of the **inhalator** housing or rotating the bottom of the housing. The user inserts a mouthpiece (32) on the housing into the mouth and inhales. This causes a **chamber** (68) in the housing under a diaphragm (92) to evacuate, thereby pulling the diaphragm (92) down onto a knock out lever (96). The pivoting of the lever (96) enables release of a piston (62) into a cylinder (68) which first compresses, and then dispenses a reduced volume of air at high pressure in a burst up through the medicament disc (10). When the burst of air hits the impregnated disc (10), the dose (16) is forced out of the mesh's interstices, producing a cloud of the drug in its powdered form, which is inhaled by the user.

Fulltext Availability: Detailed Description

## Detailed Description

... screen mesh disc 10, which could be woven, such as a silkscreen, or formed from **polyamide** fibers, or even stamped or etched from a piece of metal or ceramic, the air...

...dose 16 indexed between holes 48 in the pressure plates and cassette top 40 in **inhalator** 20. The **inhalator** is armed by retracting a finger pull 54 manually extending downwardly through an opening 56 formed in the bottom 58 of the **inhalator** housing. The finger pull 54 is connected to a U-shaped linkage 60 having a...

...64 in the bight 66 of the linkage 60 into a cylinder 68 or pressure **chamber** having an upright nozzle 70 at one end receiving in communication therewith a downwardly extending...

6/3,AB,K/7 (Item 7 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00124092

SINGLE INLET PREPACKAGED INHALERINHALATEUR PREEMBALLÉ À ORIFICE D'ADMISSION UNIQUE

Patent Applicant/Assignee:

VORTAN CORPORATION,

Inventor(s):

HUGHES Nathaniel,

Patent and Priority Information (Country, Number, Date):

Patent: WO 8502345 A1 19850606

Application: WO 84US1518 19840918 (PCT/WO US8401518)

Priority Application: US 83703 19831128

Designated States: AT AU BE BR CH DE DK FI FR GB JP LU NL SE

Publication Language: English

Fulltext Word Count: 9328

## English Abstract

An apparatus (22) for applying medication as an aerosol includes a fluid supply channel (96) for supplying fluid from a container (24) of a mixture of propellant and medication wherein the fluid supply channel is adapted to accept a nozzle (26) coupled to the container for receiving the mixture and wherein the fluid supply channel has a first cross-sectional area. A first chamber (30) at a first downstream portion from the fluid supply channel has a second cross-sectional area (34) for expanding the fluid and for forming a first flow condition. A chamber (36) is supplied downstream from the fluid supply channel for changing



the first flow condition.  
Fulltext Availability: Claims  
Claim

... mixture and wherein the fluid supplying means has a first cross sectional area;  
a first **chamber** at a first downstream portion from the fluid supplying means having a second cross sectional...  
...The apparatus as claimed in claim 1 wherein the changing means comprises a second expansion **chamber** having a third cross sectional area-for expanding the fluid,  
3e The apparatus as claimed...  
...a screen.  
13\* The apparatus as claimed in claim 12 wherein the screen comprises a **nylon** screen.  
OMPI  
14\* The apparatus as claimed in claim 13 wherein the screen comprises a...  
...claimed in claim 13 wherein the screen is approximately 06980 inch in diameter.  
17e An **inhaler** for administering a medicine containing aerosol, comprising:  
an inlet having a first axis for accepting...free end of the bar and at least partly within the body;  
a first expansion **chamber** defined by first **chamber** walls adjacent the body;  
a second expansion **chamber** defined by second **chamber** walls adjacent the first expansion **chamber** ; and  
a screen mounted to an end of the second expansion **chamber** .  
18 An inhaler for administering a medicine containing aerosol, comprising: an inlet for accepting a...

15/3,AB,K/1 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.  
00821281

Suction coagulator bending tool  
Biegewerkzeug fur eines Saug- und Koagulationsinstrument  
Outil pour cintrer un instrument de coagulation et aspiration

PATENT ASSIGNEE:

MEGADYNE MEDICAL PRODUCTS, INC., (1416711), 11506 S.State Street, Draper, UT 84020, (US), (applicant designated states: DE;FR;GB;IT)

INVENTOR:

Nettekoven, William S., 101094 South 2020 East, Sandy, Utah 84092, (US)

LEGAL REPRESENTATIVE:

Wagner, Karl H., Dipl.-Ing. et al (12561), WAGNER & GEYER Patentanwalte  
Gewurzmuhlstrasse 5, 80538 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 763366 A1 970319 (Basic)

APPLICATION (CC, No, Date): EP 96114551 960911;

PRIORITY (CC, No, Date): US 529227 950915

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: A61M-001/00 ; A61B-017/39

ABSTRACT EP 763366 A1

A combination suction coagulator and dedicated bending tool for customizing working surfaces of suction coagulator instruments. A working extension of the coagulator is provided with an improved insulating

coating and is adapted for customized bending with a dedicated tool that has at one end a recess with a centrally located mandrel pin for insertion into the hollow interior of the coagulator extension. A curved channel is provided in cooperative association with the recess and mandrel pin so as to limit the radius of any bend that may be made by the user. That, in combination with the form-fitting mandrel pin provide a ready way of bending the distal extremity of the coagulator extension while maintaining its internal geometrical integrity. The tool also includes a custom stylet for use in cleaning accumulated debris from the interior of the working extension.

ABSTRACT WORD COUNT: 140

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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CLAIMS A	(English)	EPAB97	434
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SPEC A	(English)	EPAB97	2133
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Total word count - document A	2567
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Total word count - document B	0
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Total word count - documents A + B	2567
------------------------------------	------

...SPECIFICATION of a variety of well known plastic or similar materials such as polystyrenes, polycarbonates, and **polyamides**, but ABS lacrylonitrile-butadiene-styrened polymers are preferred. Its exterior geometrical configuration includes generally concave...

...for only 1 or 2 centimeters and is a polytetrafluoroethylene (PTFE) to help minimize eschar **buildup** and adherence. Coating 19 is optional.

Power cable 17 is provided for connection to a...

15/3,AB,K/3 (Item 3 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00474624

Filter for parenteral systems

Filter fur Infusionssysteme

Filtre pour systeme d'infusion

PATENT ASSIGNEE:

PALL CORPORATION, (203771), 30 Sea Cliff Avenue, Glen Cove, New York 11542, (US), (applicant designated states: DE;FR;GB;IT)

INVENTOR:

Matkovich, Vlado I., 11 Old Estate Road, Glen Cove, New York 11542, (US)

Gsell, Thomas C., 40 Valentine Avenue, Glen Cove, New York 11542, (US)

Bormann, Thomas J., 29 Cawfield Lane, Melville, New York 11747, (US)

LEGAL REPRESENTATIVE:

Dost, Wolfgang, Dr.rer.nat., Dipl.-Chem. et al (3042), Patent- und Rechtsanwalte Bardehle . Pagenberg . Dost . Altenburg . Geissler .

Isenbruck Postfach 86 06 20, 81633 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 489403 A2 920610 (Basic)

EP 489403 A3 940518

EP 489403 B1 990602

APPLICATION (CC, No, Date): EP 91120765 911203;

PRIORITY (CC, No, Date): US 620775 901203

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: B01D-061/18; **A61M-005/165** ; B01D-039/16

ABSTRACT EP 489403 A2

A filter device (10) and method are provided for treating parenteral nutrient fluids, particularly TNA systems containing lipids, glucose, and amino acids. The filter device comprises a housing (11) and a microporous

medium in the form of a synthetic polymeric microporous structure having a pore rating of less than 1.2 micrometers. A preferred microporous medium comprises, in series, a matrix of microfibers which has been radiation grafted to render the matrix wettable by parenteral nutrient fluids followed by a microporous membrane, also wettable by parenteral nutrient fluids, and having a finer pore rating than the microfibrinous matrix. (see image in original document)

ABSTRACT WORD COUNT: 104

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9922	699
CLAIMS B	(German)	9922	667
CLAIMS B	(French)	9922	855
SPEC B	(English)	9922	4206
Total word count - document A			0
Total word count - document B			6427
Total word count - documents A + B			6427

...SPECIFICATION greatly extends the volume of the TNA admixture that can be filtered without excessive pressure build up. Examples 4 and 5 demonstrate the benefits derived from the use of a prefilter...

15/3,AB,K/6 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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01072953

**ENDOTRACHEAL TUBE APPARATUS AND METHOD FOR USING THE SAME TO REDUCE THE RISK OF INFECTIONS**

**APPAREIL A TUBES ENDOTRACHEAUX ET PROCEDE D'UTILISATION ASSOCIE PERMETTANT DE DIMINUER LE RISQUE D'INFECTIONS**

Patent Applicant/Assignee:

UNIVERSITY OF FLORIDA, 1938 W.University Avenue, Gainesville, FL 32611,  
US, US (Residence), US (Nationality), (For all designated states  
except: US)

Patent Applicant/Inventor:

MELKER Richard, L1-177, Brain Institute, P.O. Box 100254, Gainesville, FL  
32610-0254, US, US (Residence), US (Nationality), (Designated only for:  
US)

Legal Representative:

VAN DYKE Timonthy H (agent), VAN DYKE & ASSOCIATES, P.A., 7200 Lake  
Ellenor Drive, Suite 252, Orlando, FL 32809, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 2003101516 A1 20031211 (WO 03101516)

Application: WO 2003US16847 20030529 (PCT/WO US0316847)

Priority Application: US 2002157003 20020529

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 6183

English Abstract

Disclosed herein is a novel tube-in-tube endotracheal tube apparatus that allows for replacement of cleaning of an inner tube (26) without having to reintubate the patient. The novel endotracheal apparatus enables the application of continuous suction or intermittent suction. The endotracheal device also serves to decrease the incidence of ventilator-associated pneumonia.

Main International Patent Class: **A61M-016/00**

Fulltext Availability: Detailed Description

Detailed Description

... 10 are preferably constructed of a hydrogel-like material to reduce the risk of microbe **build up**, which may result in complications including ventilator-associated pneumonia. The first tube 26 and/or...  
...or coated with a conventional pliable plastic such as polyvinyl chloride (PVC), polyurethane, fluoroelastic, polyester, **nylon**, polypropylene and silicone plastic. However in a more preferred embodiment, the first tube 26 is...

**15/3,AB,K/7** (Item 2 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00990653

**BARRIER CATHETER APPARATUS AND METHOD**

**CATHETER A EFFET BARRIERE, ET PROCEDE**

Patent Applicant/Assignee:

MEDTRONIC MINIMED INC, 18000 Devonshire Street, Northridge, CA 91325, US,  
US (Residence), US (Nationality)

Inventor(s):

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OBERG Keith, 25850 El Gato Place, Valencia, CA 91355, US,  
MOUNCE Paul, 211 N. Beachwood Drive, Burbank, CA 91506, US,  
LORD Peter C, 25505 Old Course Way, Santa Clarita, CA 91355, US,  
VAN ANTWERP William P, 24101 West Del Monte, #418, Valencia, CA 91355, US,

Legal Representative:

RITTMASER Ted R (agent), FOLEY & LARDNER, 35th Floor, 2029 Century Park  
East, Los Angeles, CA 90067-3021, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200320337 A2-A3 20030313 (WO 0320337)

Application: WO 2002US28173 20020903 (PCT/WO US0228173)

Priority Application: US 2001317358 20010905; US 200136081 20011228

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO

RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 8437

English Abstract

A catheter (20) for use in delivery or withdrawal of a formulation, wherein the catheter has an outer layer (22) comprising a bio-compatible material and a barrier layer (24) comprising a material that provides a

more effective barrier than the outer layer (22) against inward and outward diffusion of substances that may cause destabilization of the formulation. The outer surface of the barrier layer (24) contacts at least a portion of the inner surface of the outer layer (24). The catheter (20) may include a flared distal end tip to aid in the release, during a bolus delivery or catheter flush, of any obstruction situated at the distal end tip of the catheter. The larger cross-sectional area at the flared distal end tip minimizes the chances that any obstruction that develops at the distal end tip will be sufficient to hinder the flow of the formulation within the lumen of the catheter (20).

Main International Patent Class: **A61M-031/00**

Fulltext Availability: Detailed Description

Detailed Description

... distal end tip of the catheter leads to precipitation and eventually to the formation of **deposits** that may result in catheter obstructions. Thus, in prior art catheters, Lispro and other forms... Other suitable materials include polymeric materials such as, but not limited to, polyarades, EVOH, PEEK, **nylon**, polyester, or derivatives of any of these materials. In addition, inorganic materials such as, but... sufficient to hinder the flow of the infusion formulation within the lumen 36. In addition, **deposits** that do form in the flared portion of distal end tip 33 are more likely... of these materials. Other suitable materials include polymeric materials such as, but not limited to, **polyamides**, EVOH, PEEK, **nylon**, polyester, or derivatives of any of these materials. In addition, inorganic materials such as, but... of these materials. Other suitable materials include polymeric materials such as, but not limited to, **polyamides**, EVOH, PEEK, **nylon**, polyester, or derivatives of any of these materials. In addition, inorganic materials such as, but... be more accurately controlled. Embodiments of the present invention also provide a catheter which inhibits **deposit** formation at the distal end tip and facilitates the expulsion during delivery, for example, delivery... to the infusion site. Embodiments of the present invention also provide a catheter which inhibits **deposit** formation at the distal end tip by providing a slit valve at the distal end...

15/3,AB,K/10 (Item 5 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00395886

**CATHETER WITH VARIABLE FLEXIBILITY PROPERTIES AND METHOD OF MANUFACTURE**

**CATHETER A FLEXIBILITE VARIEE ET PROCEDE DE FABRICATION**

Patent Applicant/Assignee:

SOLTESZ Peter P,

Inventor(s):

SOLTESZ Peter P,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9736629 A1 19971009

Application: WO 97US5459 19970402 (PCT/WO US9705459)

Priority Application: US 9614552 19960403; US 97824630 19970327

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES

FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN

MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN YU GH KE

LS MW SD SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR

IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 3986

## English Abstract

A catheter (105) having various flexibility properties along the longitudinal extent thereof comprises contiguous tubular segments formed from polymeric materials having various physical properties. To manufacture the catheter, a grounded wire (430) is conveyed through adjacent coating chambers (405, 410, 415) separated by movable walls (465, 470), each chamber containing an aerated powder of charged polymer particles (305) having a flexibility property. The charged polymer particles are simultaneously deposited on the grounded wire, and then heated and cooled to form a polymeric tube. Each chamber has its own dry air (440, 445, 450), and high voltage power supplies (420, 455, 460) to control the wall thickness of each segment individually. The lengths of the segments are selected by adjusting the walls of the coating chambers, and also by adjusting the sizes of apertures (475, 480) in the walls.

Main International Patent Class: A61M-025/00

Fulltext Availability: Detailed Description

## Detailed Description

... of materials are available for powder coatings, including but not limited to. polyesters, polyimides, nylons ( **polyamides** ), polytetrafluoroethylene (PTFE), ECTFE, PFA, polyethylenes, polypropylenes, polyurethanes. The process is capable of creating pinhole free. single pass film **build - up** from .0005" to .020" in a controllable manner. In Figure.2 there is shown a...available coated wire comprises a variety of polymers, including, but not limited to polyurethane, polyester, **polyamide** , polyimide and PTFE. A known "liquid coatinor" technology is used to **deposit** these materials on the wire in extremely thin layers on the order of .0002"...

(FILE 'HOME' ENTERED AT 11:58:50 ON 30 APR 2004)

FILE 'HCAPLUS' ENTERED AT 11:59:04 ON 30 APR 2004

L1 2267 S INHALATOR? OR INHALER? OR (INHALATION OR INHALING) (W) (DEVICE?  
L2 174234 S POLYAMIDE OR POLYAMIDES OR POLYMER? () (AMIDE OR AMIDES) OR NYL  
L3 15 S L1 AND L2

L3 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:269859 HCAPLUS

DN 140:297547

TI Methods and compositions for therapeutic use of RNA interference for attenuating expression of a target gene

L3 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:656197 HCAPLUS

DN 139:202481

TI Methods and compositions for therapeutic use of RNA interference

L3 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:548599 HCAPLUS

DN 137:267458

TI 3-Heptanone. Documentation of proposed values of permissible levels of occupational exposure

L3 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:504667 HCAPLUS

DN 137:68201

TI Metered dose \*\*\*inhaler\*\*\* for salmeterol xinafoate

L3 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:683463 HCAPLUS

DN 137:37540

TI Quantifying electrostatic interactions in pharmaceutical solid systems

L3 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:423692 HCAPLUS

DN 135:14334

TI Inhibition of mucin release from airway goblet cells by polycationic peptides

L3 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:344582 HCAPLUS

DN 136:107394

TI Dry powder \*\*\*inhaler\*\*\* with mesh

L3 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:783224 HCAPLUS

DOCUMENT NUMBER: 133:340255

TITLE: Metered dose \*\*\*inhaler\*\*\* for salmeterol

INVENTOR(S): Ashurst, Ian C.; Herman, Craig S.; Li, Li; Riebe, Michael T.

PATENT ASSIGNEE(S): Glaxo Wellcome Inc., USA; Glaxo Group Ltd.

SOURCE: U.S., 9 pp., Cont.-in-part of U.S. Ser. No. 5833,32, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6143277	A	20001107	US 1996-770533	19961219
EP 1366777	A1	20031203	EP 2003-17935	19960410
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, AL				
US 6524555	B1	20030225	US 2000-562946	20000503

PRIORITY APPLN. INFO.:

US 1996-583332	B2	19960105
US 1995-422370	A	19950414
EP 1996-911712	A3	19960410
WO 1996-US5005	A1	19960410
US 1996-770533	A1	19961219

AB Disclosed is a metered dose \*\*\*inhaler\*\*\* having part or all of its internal metallic surfaces coated with one or more fluorocarbon polymers, in combination with one or more non-fluorocarbon polymers, for dispensing an inhalation drug formulation comprising salmeterol, or a salt thereof, and a fluorocarbon propellant, optionally in combination with one or more other pharmacol. active agents and one or more excipients. Std. 12.5 mL MDI cans were spray-coated with primer (DuPont 851-204) and cured to the vendor's std. procedure, then further spray-coated with either perfluorinated ethylene-propylene copolymer or perfluoroalkoxyalkylene and cured according to the vendor's std. procedure. The thickness of the coating was 10-50 mm and these cans were then purged of air, the valves crimped in place, and a suspension of 4 mg salmeterol xinafoate in 12 g P134a was filled through the valve.

REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:46469 HCAPLUS

DOCUMENT NUMBER: 130:71537

TITLE: Sealing material for use in a valve for an aerosol  
\*\*\*inhaler\*\*\*

INVENTOR(S): Thomas, Jonathan Howel

PATENT ASSIGNEE(S): Bepak PLC, UK

SOURCE: Brit. UK Pat. Appl., 8 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2323597	A1	19980930	GB 1997-6252	19970326

PRIORITY APPLN. INFO.:

GB 1997-6252	19970326
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AB A seal for a valve for use in a pharmaceutical metered dose aerosol \*\*\*inhaler\*\*\* device, which seal is formed from a mixt. comprising a crosslinked elastomeric material (such as natural rubber) and one or both of a thermoplastic material (such as polycarbonates) and a thermoplastic elastomeric material is disclose (no data).

L3 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:718338 HCAPLUS

DOCUMENT NUMBER: 125:339074

**TITLE:** Metered dose \*\*\*inhaler\*\*\* for albuterol

INVENTOR(S): Ashurst, Ian C.; Herman, Craig S.; Li, Li; Riebe,



Michael T.  
 PATENT ASSIGNEE(S): Glaxo Wellcome Inc., USA  
 SOURCE: PCT Int. Appl., 20 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9632099	A1	19961017	WO 1996-US5002	19960410
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
CA 2217950	AA	19961017	CA 1996-2217950	19960410
CA 2217950	C	20011225		
CA 2361954	AA	19961017	CA 1996-2361954	19960410
CA 2361954	C	20030708		
CA 2391617	AA	19961017	CA 1996-2391617	19960410
AU 9654809	A1	19961030	AU 1996-54809	19960410
AU 710382	B2	19990916		
EP 820279	A1	19980128	EP 1996-911710	19960410
EP 820279	B1	20020703		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
BR 9604976	A	19980609	BR 1996-4976	19960410
CN 1186430	A	19980701	CN 1996-194411	19960410
PL 180900	B1	20010430	PL 1996-322778	19960410
SK 281746	B6	20010710	SK 1997-1388	19960410
HU 219900	B	20010928	HU 1998-1526	19960410
EP 1157749	A2	20011128	EP 2001-202061	19960410
EP 1157749	A3	20031126		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
AT 219934	E	20020715	AT 1996-911710	19960410
PT 820279	T	20021129	PT 1996-96911710	19960410
ES 2179192	T3	20030116	ES 1996-911710	19960410
EE 3997	B1	20030415	EE 1997-280	19960410
CZ 292578	B6	20031015	CZ 1997-3259	19960410
NO 9704737	A	19971211	NO 1997-4737	19971013
BG 64075	B1	20031231	BG 1997-102021	19971105
PRIORITY APPLN. INFO.:				
			US 1995-422371	A2 19950414
			US 1996-584860	A2 19960105
			US 1996-585860	A 19960105
			CA 1996-2217950	A3 19960410
			CA 1996-2361954	A3 19960410
			EP 1996-911710	A3 19960410
			WO 1996-US5002	W 19960410
AB	A metered dose ***inhaler*** having part or all of its internal surfaces coated with 1 or more fluorocarbon polymers, optionally in combination with 1 or more non-fluorocarbon polymers, for dispensing an inhalation drug formulation comprises albuterol or its salt, and a fluorocarbon propellant, in combination with 1 or more other drugs and excipients. Std. metered-dose ***inhaler*** cans were spray coated			

with PTFE-FEP- \*\*\*polyamide\*\*\* -imide blend and cured. The thickness of the coating was 1-20 .mu.m. The cans were purged of air, the valves crimped in place, and a suspension of 31.8 or 15.4 mg micronized albuterol sulfate in 19.8 or 9.6 g P134a was filled through the valve.

L3 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:710595 HCAPLUS

DOCUMENT NUMBER: 125:339163

TITLE: Metered dose \*\*\*inhaler\*\*\* for beclomethasone dipropionate

INVENTOR(S): Ashurst, Ian C.; Herman, Craig S.; Li, Li; Riebe, Michael T.

PATENT ASSIGNEE(S): Glaxo Wellcome Inc., USA

SOURCE: PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9632345	A1	19961017	WO 1996-US5009	19960411
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
AU 9654812	A1	19961030	AU 1996-54812	19960411
AU 718851	B2	20000420		
EP 820414	A1	19980128	EP 1996-911713	19960411
EP 820414	B1	20040204		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
BR 9604979	A	19980609	BR 1996-4979	19960411
CN 1186473	A	19980701	CN 1996-194409	19960411
JP 2000513237	T2	20001010	JP 1996-531181	19960411
PL 180880	B1	20010430	PL 1996-322781	19960411
US 6149892	A	20001121	US 1997-945141	19971014
US 6511652	B1	20030128	US 2000-506834	20000218
US 6511653	B1	20030128	US 2000-506838	20000218
AU 751859	B2	20020829	AU 2000-48669	20000719
US 2003103906	A1	20030605	US 2002-319680	20021216

PRIORITY APPLN. INFO.:

US 1995-422280 A2 19950414

WO 1996-US5009 W 19960411

US 1997-945141 A1 19971014

US 2000-506834 A3 20000218

AB A metered dose \*\*\*inhaler\*\*\* (MDI) having part or all of its internal surfaces coated with .gtoreq.1 fluorocarbon polymers, optionally in combination with .gtoreq.1 nonfluorocarbon polymers, is provided for dispensing an inhalation drug formulation comprising beclomethasone dipropionate or a physiol. acceptable solvate thereof and a fluorocarbon propellant, optionally in combination with .gtoreq.1 other pharmacol. active agents or .gtoreq.1 excipients. Thus, a 12.5-mL MDI can was spray-coated with primer and then with fluorinated ethylene-propylene copolymer, cured, purged, and filled with a suspension of 24 mg

beclomethasone dipropionate in 18 g 1,1,1,2-tetrafluoroethane  
(propellant).

L3 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:705746 HCAPLUS

DOCUMENT NUMBER: 125:339049

TITLE: Metered dose \*\*\*inhaler\*\*\* for fluticasone  
propionate

INVENTOR(S): Ashurst, Ian C.; Herman, Craig S.; Li, Li; Riebe,  
Michael T.

PATENT ASSIGNEE(S): Glaxo Wellcome Inc., USA

SOURCE: PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9632151	A1	19961017	WO 1996-US5006	19960410
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
CA 2217948	AA	19961017	CA 1996-2217948	19960410
CA 2217948	C	20020219		
CA 2368934	AA	19961017	CA 1996-2368934	19960410
AU 9653901	A1	19961030	AU 1996-53901	19960410
AU 718576	B2	20000413		
EP 820322	A1	19980128	EP 1996-910810	19960410
EP 820322	B1	20020710		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
BR 9604978	A	19980609	BR 1996-4978	19960410
CN 1187138	A	19980708	CN 1996-194635	19960410
CN 1113675	B	20030709		
JP 11503352	T2	19990326	JP 1996-531180	19960410
JP 2001231861	A2	20010828	JP 2001-10020	19960410
EP 1166811	A2	20020102	EP 2001-122359	19960410
EP 1166811	A3	20030528		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, AL				
AT 220338	E	20020715	AT 1996-910810	19960410
PT 820322	T	20021031	PT 1996-96910810	19960410
ES 2179190	T3	20030116	ES 1996-910810	19960410
EE 4004	B1	20030415	EE 1997-285	19960410
US 2003138559	A1	20030724	US 2003-356591	20030203
PRIORITY APPLN. INFO.:				
			US 1995-422111	A2 19950414
			US 1996-584859	A2 19960105
			CA 1996-2217948	A3 19960410
			EP 1996-910810	A3 19960410
			JP 1996-531180	A3 19960410
			WO 1996-US5006	W 19960410
			US 1997-829562	A1 19970331
			US 2000-570725	A1 20000515

AB Disclosed herein is a metered dose \*\*\*inhaler\*\*\* (MDI) having part or all of its internal surfaces coated with one or more fluorocarbon polymers, optionally in combination with one or more non-fluorocarbon polymers, for dispensing an inhalation drug formulation comprising fluticasone propionate or a physiol. acceptable salt thereof and a fluorocarbon propellant, optionally in combination with one or more other pharmacol. active agents or one or more excipients. Coating the interior surfaces of MDI's with a fluorocarbon polymer significantly reduces the problem of adhesion or deposition of fluticasone propionate on the can walls and thus ensures consistent delivery of medication in aerosol from the MDI.

L3 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:705745 HCAPLUS

DOCUMENT NUMBER: 125:339048

TITLE: Metered dose \*\*\*inhaler\*\*\* for salmeterol

INVENTOR(S): Ashurst, Ian C.; Herman, Craig S.; Li, Li; Riebe, Michael T.

PATENT ASSIGNEE(S): Glaxo Wellcome Inc., USA

SOURCE: PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9632150	A1	19961017	WO 1996-US5005	19960410
W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI			
RW:	KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA			
CA 2217954	AA	19961017	CA 1996-2217954	19960410
AU 9654811	A1	19961030	AU 1996-54811	19960410
AU 718263	B2	20000413		
EP 820323	A1	19980128	EP 1996-911712	19960410
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI			
BR 9604977	A	19980609	BR 1996-4977	19960410
CN 1186447	A	19980701	CN 1996-194410	19960410
EE 4005	B1	20030415	EE 1997-374	19960410
EP 1366777	A1	20031203	EP 2003-17935	19960410
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, AL			
US 6524555	B1	20030225	US 2000-562946	20000503
AU 752682	B2	20020926	AU 2000-45170	20000711

PRIORITY APPLN. INFO.:

US 1995-422370	A2	19950414
US 1996-583332	A2	19960105
EP 1996-911712	A3	19960410
WO 1996-US5005	W	19960410
US 1996-770533	A1	19961219

AB Disclosed herein is a metered dose \*\*\*inhaler\*\*\* (MDI) having part or all of its internal surfaces coated with one or more fluorocarbon polymers, optionally in combination with one or more non-fluorocarbon polymers, for dispensing an inhalation drug formulation comprising

salmeterol, or a physiol. acceptable salt thereof, and a fluorocarbon propellant, optionally in combination with one or more other pharmacol. active agents or one or more excipients. Coating the interior surfaces of MDI's with a fluorocarbon polymer significantly reduces the problem of adhesion or deposition of salmeterol on the can walls and thus ensures consistent delivery of medication in aerosol from the MDI.

Set	Items	Description
S1	239243	HEAT() (EXCHANG? OR TRANSFER?)
S2	143549	SURFACTANT? OR SURFACE() ACTIVE OR SURFACEACTIVE() AGENT?
S3	233019	ANION? OR CATION? OR COUNTERION? OR NONION? OR (AN OR CAT - OR COUNTER OR NON) (ION OR IONS OR IONIC?) OR TEMPERATURE() I- NDEPENDENT OR (NON OR "NOT") (TEMPERATURE() DEPENDENT
S4	959493	MOLECUL? OR MICELL? OR MICROSTRUCTUR? OR MICRO() STRUCTUR?
S5	256290	DRAG OR FRICTION?
S6	1487121	WIRE? OR MESH?? OR FILTER??
S7	421141	REBUIL? OR RECOVER? OR RECONSTITUT? OR RECOMPOS? OR REFORM? OR REPAIR? OR REPAR? OR SELFREPAIR? OR REASSEMBL? OR SELFASS- EMBL? OR SELF() (REPAR? OR ASSEMBL? OR REPAIR?)
S8	852602	BREAK? OR FRACTUR? OR DISRUPT? OR TURBULEN? OR DEGRAD? OR - DISTURB? OR ROIL? OR STRESS? OR SHEAR?
S9	393591	BREAK? (UP OR ENLIVEN? OR INVIGORAT? OR FOAM? OR FROTH? OR EDDY? OR SWIRL? OR VORTEX? OR VORTIC? OR HELIX? OR HELIC?
S10	1528510	PUMP? OR VALV? OR FLOW() GEOMET? OR TEMPERATURE() JUMP? OR H- YDRODYNAM? OR HYDRON? OR ULTRASONIC? OR ULTRASOUND? OR ELECTR- OMAGNET?
S11	368910	IC=(F24H? OR C10M? OR C09K? OR F28F? OR F28D? OR C11D?)
S12	943	S1 AND S2
S13	352	S12 AND S11
S14	274	S12 AND S3
S15	943	S12:S14
S16	133	S15 AND S4
S17	9	S16 AND S5
S18	30	S15 AND S5
S19	17	S18 AND (S6:S10)
S20	7	S16 AND S7
S21	35	S17:S20
S22	35	IDPAT (sorted in duplicate/non-duplicate order)

? show files

File 347:JAPIO Nov 1976-2004/Jan(Updated 040506)

(c) 2004 JPO & JAPIO

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200431

(c) 2004 Thomson Derwent

?

22/3,K/7 (Item 7 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

014967360

WPI Acc No: 2003-027874/200302

Related WPI Acc No: 2003-801676

XRAM Acc No: C03-006364

Heat transfer composition for transferring heat between heat source  
and heat sink includes metal (oxide) powder coated with corrosion  
inhibitor or ethylene oxide/propylene oxide block copolymer

Patent Assignee: BONSIGNORE P (BONS-I); GURIN M H (GURI-I)

Inventor: BONSIGNORE P; GURIN M H

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6432320	B1	20020813	US 98184137	A	19981102	200302 B
			US 2000721074	A	20001122	

Priority Applications (No Type Date): US 2000721074 A 20001122; US 98184137  
A 19981102

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 6432320 B1 8 C09K-005/14 CIP of application US 98184137

Heat transfer composition for transferring heat between heat source  
and heat sink includes metal (oxide) powder coated...

Abstract (Basic):

... Additive for a **heat transfer** medium comprises a coated  
powder. The powder comprises metals, metal oxides and/or alloys, and...  
... The composition has increased thermal conductivity, thermal  
capacity and energy efficiency, and reduced **pump** energy requirements.  
The effects on the boiling and freezing temperatures of the host **heat**  
**transfer** fluid are minimized. The composition produces reductions in  
energy consumption, fluid velocities and **friction** and pressure losses  
within a circulation **pump**.

Technology Focus:

... Preferred Components: The **heat transfer** medium comprises  
water; aqueous brine; a mixture of water with alcohols, glycols and/or  
ammonia...

...5-mercaptotetrazole, thiadiazole, and/or halogen-resistant azole. The  
coating also includes lignin, lignin derivatives, **anionic**  
**surfactants** and/or **non - ionic surfactants**. The **heat transfer**  
composition also includes additional additives, preferably  
functionalizing agents, dispersants, **surfactants** and/or antioxidants  
...

...Preferred Function: The coating increases settling time of the additive  
in the **heat transfer** medium, passivates the additive, inhibits  
corrosion of the additive and/or increases long term stability...

...Preferred Method: The powder is treated with the chemical agent and is  
combined with the **heat transfer** medium. The treatment step includes  
dispersing the chemical agent in a solvent and contacting the...

Extension Abstract:

... oven drying. The product showed enhanced thermal transfer  
properties and dispersion characteristics when combined with **heat**  
**transfer** media, compared with an untreated copper powder.

International Patent Class (Main): C09K-005/14

International Patent Class (Additional): C09K-005/00



22/3,K/13 (Item 13 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013568878 \*\*Image available\*\*  
WPI Acc No: 2001-053085/200107  
XRAM Acc No: C01-014885

Reducing friction of hydrous heat transfer medium in pipe comprises  
use of amphoteric surfactant

Patent Assignee: TOHO CHEM IND CO LTD (TOHR )  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2000265152	A	20000926	JP 99107001	A	19990311	200107 B

Priority Applications (No Type Date): JP 99107001 A 19990311

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2000265152	A		7	C09K-003/00	

Reducing friction of hydrous heat transfer medium in pipe comprises  
use of amphoteric surfactant

Abstract (Basic):

... Reducing friction of hydrous heat transfer medium in pipes  
comprising using an amphoteric surfactant .  
... Reducing friction of hydrous heat transfer medium in  
pipes, comprising using an amphoteric surfactant of formula (I...

...X=organic acid organic acid anion .

...

...Reducing friction of a heat transfer medium in a pipe

...Title Terms: FRICTION ;

International Patent Class (Main): C09K-003/00

International Patent Class (Additional): C09K-005/00

22/3,K/15 (Item 15 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013198318 \*\*Image available\*\*  
WPI Acc No: 2000-370191/200032  
XRPX Acc No: N00-277221

Heat exchanger tube for heat exchanger in heat carrier system  
Patent Assignee: OHBAYASHI GUMI KK (OHBA ); OSAKA GAS CO LTD (OSAG )  
Number of Countries: 001 Number of Patents: 001  
Patent Family:  
Patent No Kind Date Applicat No Kind Date Week  
JP 2000121284 A 20000428 JP 98290387 A 19981013 200032 B

Priority Applications (No Type Date): JP 98290387 A 19981013  
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2000121284	A		6	F28F-013/12	

Heat exchanger tube for heat exchanger in heat carrier system

Abstract (Basic):

... A twisted flat plate (13) is provided inside the heat exchanger tube (12) to stir, and add shearing power to, the heat conveying medium which flows inside the tube and perform heat transfer. An aqueous solution to which a surface active agent is added is used as the heat conveying medium. The surface active agent reduces the frictional resistance.  
... For heat exchanger in heat carrier system...

...Allows heat exchanger to be reduced in size without reduction in heat-conducting characteristic of heat exchanger tube even when aqueous solution, to which surface active agent is added, is used as heat exchanger.  
...

...The figure is a partial cross-section perspective diagram showing the structure of the heat exchanger tube...

... Heat exchanger tube (12  
International Patent Class (Main): F28F-013/12

22/3,K/16 (Item 16 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

*INVENTORS*

013085181 \*\*Image available\*\*  
WPI Acc No: 2000-257053/200022  
XRAM Acc No: C00-078617  
XRPX Acc No: N00-191052

**Fluid for controlling heat transfer includes base component and surfactant having drag -reducing, fluid degradation and fluid recovery properties**

Patent Assignee: UNIV CALIFORNIA (REGC )  
Inventor: ~~GASTJEVIC~~ K; ~~MATTHEYS~~ E F  
Number of Countries: 083 Number of Patents: 002  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200014455	A1	20000316	WO 99US20220	A	19990902	200022 B
AU 9957036	A	20000327	AU 9957036	A	19990902	200032

Priority Applications (No Type Date): US 98148029 A 19980903

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
WO 200014455 A1 E 38 F24H-003/00

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU  
CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK  
LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ  
TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 9957036 A F24H-003/00 Based on patent WO 200014455

**Fluid for controlling heat transfer includes base component and surfactant having drag -reducing, fluid degradation and fluid recovery properties**

Abstract (Basic):

... A fluid comprises a base component; and a **surfactant** having **drag -reducing, fluid degradation and fluid recovery properties** that are independent of temperature when combined with the base component.

... INDEPENDENT CLAIMS are also included for (A) a **hydraulic** system (24) including a **heat exchanger** when using a **drag -reducing surfactant** solution as a thermal distribution fluid; a **surfactant** solution flowing through the **heat exchanger**, which reduces fluid **drag** within the system and provides optimized **recovery** time as defined by the ability of the **surfactant** solution to **rebuild molecular or micellar structures after disruption** of the **molecular or micellar structures**; and a fluid **degradation** device to create temporary fluid **degradation** in the **heat exchanger** to **break or disrupt the molecular or micellar structures** in the **surfactant** solution by high local **shear stresses** to increase the **heat transfer** rate of the solution; (B) a method of **heat exchange** in a **hydraulic** system, comprising providing a **surfactant** solution as a **heat exchanging** fluid in a **heat exchanger**, and returning **disturbing** flow in the **heat exchanger** to **break or disrupt the molecular or micellar structures** in the **surfactant** solution to a level approximating **heat transfer** rate of the **heat exchanging** fluid without the **surfactant** added for a predetermined distance downstream from the **disturbance** during the **recovery** time; (C) a method of **heat transfer recovery** in **turbulent** flow of **drag reducing surfactant** solutions, comprising providing a **degrading**

device which **degrades** the fluid with minimum pressure drop, creating temporary **degradation** of a circulating fluid, and conditioning the **drag** reducing fluid properties relevant for **degradation** and **recovery** ; (D) a **heat exchanger** (12) comprising two **heat exchanging** fluid paths (14, 16), at least one of which further comprises a dedicated **degrading** device; a **heat exchanging** fluid with a temporarily **degradable drag** reducing **surfactant** additive disposed in the corresponding **heat exchanging** fluid path; (E) a method of characterizing **degradability** of a fluid and **degradation** work imposed on a fluid, comprising (i) providing a flow of the fluid and a **degrading** device in the flow, (ii) creating a pressure drop across the **degrading** device, and (iii) measuring the pressure drop as an indicator of resistance to **degradation** of the **drag** reducing properties in the fluid and as an indicator of the **degradation** work imposed on the fluid; and (F) a method of managing **degradability** of a fluid and **degradation** work imposed on a fluid, comprising steps (i) and (ii) in (E), and providing a predetermined amount of time after **degradation** of the **drag** reducing properties of the fluid to allow **recovery** of the fluid without additional **degradation** work being performed...

...For controlling **heat transfer** .

....

...The invented fluid has optimized properties of **stress** resistance and **recovery** . It comprises a **surfactant** additive which is capable of withstanding **stress** in all pipes and fittings of a circulation system, and of asymptotic **drag** reduction in the pipelines of the circulation system...

...The figure is a diagram depicting a **heat exchanger** .

...

... **Heat exchanger** (12...

... **Heat exchanging** paths (14, 16...

... **Hydronic** system (24

...Title Terms: **SURFACTANT** ;

International Patent Class (Main): **F24H-003/00**

International Patent Class (Additional): **C09K-005/00** ...

... **C10M-105/08**

22/3,K/20 (Item 20 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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008792076

WPI Acc No: 1991-296090/199141

XRAM Acc No: C91-128021

**Hydraulic drag reduction at low temp. - by passing a liquid contg.  
drag reducing agent comprising quat. ammonium surfactant and organic  
counter - ion through the conduit**

Patent Assignee: YOUNG J C O C (YOUN-I); CANADIAN GOVERNMENT (CNDG );  
CANADA MIN ENERGY MINES & RESOURCES (MIMC )

Inventor: MURRAY C R; YOUNG J C O; MURRAY C B; YOUNG J C

Number of Countries: 002 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
CA 2009210	A	19910802	CA 2009210	A	19900202	199141 B
US 5143635	A	19920901	US 90615232	A	19901119	199238
			US 91788451	A	19911106	
CA 2009210	C	19990615	CA 2009210	A	19900202	199942

Priority Applications (No Type Date): CA 2009210 A 19900202

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
CA 2009210	A		12		
US 5143635	A		6	C10M-173/02	CIP of application US 90615232
CA 2009210	C	E		C10M-173/02	

**Hydraulic drag reduction at low temp...**

**...by passing a liquid contg. drag reducing agent comprising quat.  
ammonium surfactant and organic counter - ion through the conduit**

**...Abstract (Basic): A method for reducing friction exhibited by a liquid  
passing through a conduit comprises passing a conduit a liquid contg. a  
drag reducing agent comprising (1) a quaternary ammonium surfactant  
and (2) an organic counter ion to provide effective drag  
reduction at sub-ambient temps close to or below the freezing point of  
water. Also claimed is the drag-reducing compsn. used...**

**...The surfactant is an alkyl trimethyl ammonium surfactant with alkyl  
gps. contg. more than 10C atoms. (esp. n dodecyltrimethylammonium  
chloride or bromide). The counter ion is selected from benzoates,  
naphthalates, carboxylates and sulphonates and contains a negatively  
charged head group...**

**...and an electron withdrawing or delocalising gp. in both adjacent  
positions (esp. OH gps). (The counter ion is esp.  
2,6-dihydroxybenzoate). The organic counter ion is present in  
stoichiometric or greater amt...**

**...USE/ADVANTAGE - The heat exchange fluids have improved flow  
characterised at low temps. by incorporation of the drag reducing  
compsns. The method is useful in processes where water or other liquids  
are pumped or circulated in pipes or other conduits such as in  
air-conditioners, heat exchangers, slurry pipelines etc. (12pp  
Dwg.No.0/0) c**

**...Abstract (Equivalent): Reducing friction exhibited by a fluid passing  
through a conduit comprises passing through a conduit in a liq. contg.  
a drag reducing agent comprising (1) an alkyl trimethylammonium**

surfactant , in which the alkyl gp contains more than 10C atoms; and  
(2) an organic counterion comprising 2,6-dihydroxybenzoate to provide  
effective drag redn. at sub-ambient temps close to or below the  
freezing point...

...USE/ADVANTAGE - Used to improve flow of fluids through pipelines.  
Counterions which can be used with an n-alkyl trimethyl ammonium  
cationic surfactant have been found which aid micelle formation...  
...Title Terms: DRAG ;  
International Patent Class (Main): C10M-173/02  
International Patent Class (Additional): C09K-003/00 ...

... C09K-005/00 ...

... C10M-141/06

22/3,K/21 (Item 21 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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008662053

WPI Acc No: 1991-166080/199123

Related WPI Acc No: 1991-059735; 1998-520161; 1999-600495

XRAM Acc No: C91-071867

Using aq. structured surfactants as or in functional fluids - e.g.  
 hydraulic heat transfer and cutting fluids, lubricants and esp.  
 drilling muds

Patent Assignee: ALBRIGHT & WILSON UK LTD (ALBR ); ALBRIGHT & WILSON LTD  
 (ALBR )

Inventor: BLEZARD M; GROVER B W; MESSENGER E T; NICHOLSON W J; WILLIAMS M J

Number of Countries: 027 Number of Patents: 022

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 430602	A	19910605	EP 90312776	A	19901123	199123	B
GB 2238560	A	19910605	GB 9025493	A	19901123	199123	
AU 9066960	A	19910606				199130	
NO 9005126	A	19910529				199131	
CA 2030694	A	19910529				199132	
FI 9005859	A	19910529				199133	
HU 56126	T	19910729				199135	
BR 9006034	A	19910924				199143	
JP 3217499	A	19910925	JP 90323434	A	19901128	199145	
CN 1052687	A	19910703				199215	
ZA 9009531	A	19920826	ZA 909531	A	19901127	199239	
CS 9005905	A2	19920415	CS 905905	A	19901128	199243	
NZ 236238	A	19930326	NZ 236238	A	19901127	199316	
GB 2238560	B	19940511	GB 9025493	A	19901123	199416	
RO 109209	B1	19941230	RO 147226	A	19910326	199540	N
EP 430602	B1	19950913	EP 90312776	A	19901123	199541	
DE 69022371	E	19951019	DE 622371	A	19901123	199547	
			EP 90312776	A	19901123		
IE 65100	B	19951004	IE 904271	A	19901127	199547	
ES 2077040	T3	19951116	EP 90312776	A	19901123	199551	
NO 301841	B1	19971215	NO 905126	A	19901127	199806	
CA 2030694	C	19980407	CA 2030694	A	19901127	199825	
HU 217913	B	20000528	HU 907676	A	19901128	200035	

Priority Applications (No Type Date): GB 8926885 A 19891128; RO 147226 A  
 19910326

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing	Notes
EP 430602	A		16			
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE						
ZA 9009531	A		32	C09K-000/00		
CS 9005905	A2			C10M-173/00		
NZ 236238	A			C10M-173/02		
GB 2238560	B			C09K-007/00		
RO 109209	B1			C09K-007/02		
EP 430602	B1 E	20		C10M-173/02		
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE						
DE 69022371	E			C10M-173/02	Based on patent EP 430602	
IE 65100	B			C09K-005/00		
ES 2077040	T3			C10M-173/02	Based on patent EP 430602	
NO 301841	B1			C09K-007/02	Previous Publ. patent NO 9005126	
CA 2030694	C			C10M-173/00		
HU 217913	B			C09K-005/00	Previous Publ. patent HU 56126	

Using aq. structured surfactants as or in functional fluids...

...e.g. hydraulic heat transfer and cutting fluids, lubricants and esp. drilling muds

...Abstract (Basic): The use of aq. Structured **Surfactants** as or in functional fluids is novel. The functional fluids may be hydraulic, **heat transfer**, drilling cutting or spacer fluids, construction muds or esp. well drilling muds. The use of aq. Structured **Surfactants** to reduce **friction** between moving surfaces is novel...

...The aq. Structured **Surfactant** comprises an aq. solution interspersed with a **surfactant** present as lamellar solid, spherulites or G-phase. The **surfactant** is 3-35, esp. 10-15 wt.% of the compsn. Any of a wide range of **surfactants** may be used; these include alkyl benzene sulphonates, alkyl sulphates, alkyl phenol sulphates, fatty acid...

...ADVANTAGE - Aq. Structured **Surfactants** have surprisingly good lubricity for both rock and metal, even under extreme pressure conditions, and...

...Abstract (Equivalent): The use of aqueous Structured **Surfactants** comprising water and a **surfactant** structure which confers **shear**-dependent viscosity and solid-suspending properties as, or in, Functional Fluids selected from the group consisting of Lubricants, Hydraulic Fluids and **Heat Transfer** Fluids...

...Abstract (Equivalent): The use of aqueous structured **surfactants** as, or in, functional fluids...

...Title Terms: **SURFACTANT** ;

International Patent Class (Main): C09K-000/00 ...

... C09K-005/00 ...

... C09K-007/00 ...

... C10M-173/00 ...

... C10M-173/02

...International Patent Class (Additional): C09K-007/02 ...

... C09K-007/04 ...

... C10M-113/10 ...

... C10M-159/00 ...

... C10M-171/00 ...

... C10M-171/06



22/3,K/25 (Item 25 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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004356955

WPI Acc No: 1985-183833/198530

XRAM Acc No: C85-080394

Controlling overall heat transfer coefficient of a fluid - by adding  
a viscoelastic compsn. containing a surfactant and an electrolyte

Patent Assignee: DOW CHEM CO (DOWC )

Inventor: ROSE G D

Number of Countries: 011 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 8503083	A	19850718	WO 85US55	A	19850111	198530 B
US 4534875	A	19850813	US 84570577	A	19840113	198535
NO 8503589	A	19851125				198603
EP 168477	A	19860122	EP 85900872	A	19850111	198604
FI 8503517	A	19850913				198629
DK 8504153	A	19851108				198636
CA 1263524	A	19891205				199002
EP 168477	B	19911116				199145
DE 3584587	G	19911212				199151

Priority Applications (No Type Date): US 84570577 A 19840113

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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WO 8503083	A	E 29		
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Designated States (National): DK FI NO

Designated States (Regional): AT BE DE GB NL SE

EP 168477	A	E		
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Designated States (Regional): AT BE DE GB NL SE

EP 168477	B			
-----------	---	--	--	--

Designated States (Regional): AT BE DE GB NL SE

Controlling overall heat transfer coefficient of a fluid...

...by adding a viscoelastic compsn. containing a surfactant and an electrolyte

...Abstract (Basic): The overall heat transfer coefficient (U) of a heat exchange fluid (I) is controlled by (A) incorporating in I a viscoelastic surfactant compsn. (II) comprising (a) a surfactant compd. (III) having a hydrophobic moiety chemically bonded to an ionic hydrophilic moiety, and (b) an electrolyte (IV) having a moiety capable of associating with the surfactant to form a viscoelastic surfactant ; and (B) providing flow rate and temp. of I to give desired coefficient U. A further amount of electrolyte (V) having a moiety capable of associating with the surfactant ion may be present...

...USE/ADVANTAGE - II reduces friction , thus lowering pumping energy requirement in a heat exchange system; unlike previously used polymeric drag reducing cpds., II is shear stable and does not degrade in use. A high U may be provided in a high temp. heat exchange region, while providing drag reduction and low U in the distribution lines. The method is of use in district heating, hydronic heating and cooling applications and lubricating systems.

...Abstract (Equivalent): Use of a viscoelastic surfactant composition comprising (1) a surfactant compound having a hydrophobic moiety chemically bonded to an ionic hydrophilic moiety and an electrolyte

having a moiety that is capable of associating with the **surfactant** ion to form a viscoelastic **surfactant**, said **surfactant** compound represented by the formula  $R_1(Y^+)X^-$ ; or  $R_1(Z^-)A^+$  (I) wherein the...

...length of at least 12 carbon atoms or alkenyl and is chemically bonded to a **cationic** moiety  $Y^+$  or **anionic** moiety  $Z^-$  with **counterions**  $X^-$  and  $A^+$ , respectively; or (2) a **surfactant** compound having a hydrophobic moiety chemically bonded to a nonionic hydrophilic moiety, said **surfactant** compound represented by the formula  $R_1(N)$  wherein  $R_1$  is as previously defined and is chemically bonded to a **nonionic** moiety  $N$ , as an additive for controlling the overall **heat transfer** coefficient of a **heat exchange** fluid in such a manner that the **heat transfer** coefficient is similar to that of the **heat exchange** fluid not containing the **surfactant** composition at or above a critical temperature or critical mass flow rate thereby providing a high **heat transfer** coefficient in a high temperature **heat exchange** region while providing **drag** reduction and a low **heat transfer** coefficient in the distribution lines. (14pp)

...Abstract (Equivalent): **Heat exchange** fluids are improved by contacting with a functional amt. of (a) **surfactant** cpd. having a hydrophobic gp. chemically bonded to an **ionic** hydrophilic gp., (b) an electrolyte contg. a gp. which can associate with **surfactant** ion to form a viscoelastic **surfactant**, to reduce amt. of **friction** experienced by **heat transfer** fluid in appts.; and apt. (c) a further amt. of electrolyte which can associate with **surfactant** ion and further reduce **friction** experienced by the fluid...

...Pref. **surfactant** ion is **cationic** of formula  $R_1(7^+)X^-$  or **anionic** of formula  $R_1(2^-)A^+$ , where  $R_1$  is a hydrophobic gp.;  $y^+$  is **cationic** solubilising gp. bonded to  $R_1$ ;  $X^-$  is a **counter ion** associated with  $Y^+$ ;  $Z^-$  is an **anionic** solubilising gp. chemically bonded to  $R_1$ ; and  $A^+$  is a **counter ion** associated with  $Z^-$ ...

...USE - In closed-loop recirculating cysts., and district heating applications and **hydronic** heating, cooling applications.

...Title Terms: **SURFACTANT**;

International Patent Class (Additional): C09K-005/00 ...

... F28F-013/00

22/3,K/27 (Item 27 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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001582187

WPI Acc No: 1976-16579X/197609

**Reducing liquid drag - by the addition of a drag reducing polymer and fibre mixture**

Patent Assignee: UNIV DELAWARE (UYDE )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 3938536	A	19760217				197609 B

Priority Applications (No Type Date): US 74514115 A 19741011

**Reducing liquid drag - ...**

**...by the addition of a drag reducing polymer and fibre mixture**

...Abstract (Basic): The **turbulent drag** of a liquid flowing in a conduit or around a submerged object is reduced by adding to the liquid a **drag** reducing polymer and a dispensible non-soluble fibrous substance having an aspect ratio of >100...

...polymer and fibrous material exhibit a synergistic effect. Pref. polymers are those usually used for **drag** redn. purposes, for example a partially hydrolised polyacrylamide known as 'Separan AP30' (RTM) and pref. fibres are asbestos or nylon. Water is a pref. liquid medium, pref. contg. a **surfactant** to ensure fibre dispersal. The **drag** redn. is such as to render the liquid useful in large scale appts. The liquid ...

...in thermal transfer systems, where it radically reduces the powder required for circulation without affecting **heat transfer** properties.

...Title Terms: **DRAG** ;

22/3,K/32 (Item 32 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06728032 \*\*Image available\*\*

METHOD FOR DECREASING IN-PIPE **FRICTION** RESISTANCE OF WATER-BASED **HEAT**  
**TRANSFER** MEDIUM

PUB. NO.: 2000-313872 [JP 2000313872 A]  
PUBLISHED: November 14, 2000 (20001114)  
INVENTOR(s): INABA HIDEO  
KAWAGUCHI YASUO  
NOBUCHIKA KAZUO  
NAKADA TATSU  
SATO KENJI  
TOMIYAMA SUMIKO  
APPLICANT(s): TOHO CHEM IND CO LTD  
APPL. NO.: 11-156892 [JP 99156892]  
FILED: April 27, 1999 (19990427)

METHOD FOR DECREASING IN-PIPE **FRICTION** RESISTANCE OF WATER-BASED **HEAT**  
**TRANSFER** MEDIUM

INTL CLASS: C09K-003/00 ; C09K-005/00

ABSTRACT

PROBLEM TO BE SOLVED: To attain an excellent in-pipe **friction** resistance reducing effect without raising problems of toxicity, corrosiveness, and an increased environmental load by adding a mixture of a specified **surfactant** to a water-based **heat transfer** medium.

SOLUTION: A mixture of 5-95 pts.wt. amphoteric **surfactant** represented by any one of formulae I to V or combination of at least two of them and 95-5 pts.wt. **anionic** **surfactant**, a **cationic** **surfactant**, or a **nonionic** **surfactant** or combination of at least two of them is added to a water-based **heat transfer** medium. In formula I, R1 is a 1-36C alkyl, a 2-36C alkenyl, or...

...formula V, R1, R2, and R3 are each as defined as in formula I. The **anionic**, **cationic**, or **nonionic** **surfactant** is exemplified by a carboxylate-type **anionic** **surfactant** of formula VI (wherein M is Na, or the like).

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22/3,K/34 (Item 34 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05580017 \*\*Image available\*\*

**HEAT TRANSFER MEDIUM AND CIRCULATING SYSTEM THEREOF**

PUB. NO.: 09-194817 [JP 9194817 A]  
PUBLISHED: July 29, 1997 (19970729)  
INVENTOR(s): IMANARI MASAO  
YANATORI MICHIO  
HIRAMATSU MASAYOSHI  
KASUGA TOMOKO  
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP  
(Japan)  
CHUBU ELECTRIC POWER CO INC [326834] (A Japanese Company or  
Corporation), JP (Japan)  
APPL. NO.: 08-003251 [JP 963251]  
FILED: January 11, 1996 (19960111)

**HEAT TRANSFER MEDIUM AND CIRCULATING SYSTEM THEREOF**

INTL CLASS: C09K-003/00 ; E01H-005/10; F24F-005/00; F24J-002/00

ABSTRACT

PROBLEM TO BE SOLVED: To decrease the power consumption of a circulation pump in a heat transfer medium circulation system using a circulation fluid containing an antifreeze solution as a heat transfer medium, by providing a combination of the antifreeze solution and a surfactant, their addition ratio, and an application system therewith...

...SOLUTION: A heat transfer medium 2a forming micelles and containing an antifreeze solution is prepared by adding a surfactant containing a micelle forming additive to a heat transfer medium containing the antifreeze solution. The heat transfer medium 2a is circulated between the evaporation part 23 of an ice machine 4 and a heat accumulator 4. The heat transfer medium 2a forming micelles has an extremely small pipe friction coefficient, can reduce the required power of heat transfer medium circulation pump 3a, can also reduce the size of the pump than the conventional system, or, if it is compared at the same input to the...

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METAL PLASTIC WORKING OIL COMPOSITION AND SUPPLY METHOD THEREOF

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ABSTRACT

... using (B) one or more of a water-soluble dispersing agent selected from  
(a) an **anionic** high- **molecular** **surface** **active** agent with MW of  
250-25,000 and (b) a polyoxyethylene type **surface** **active** agent with MW  
of 3,000-20,000 and HLB of above 18 and supplied...

... heated to a temperature of above m.p. of (A). After lubricating, said  
suspension is **recovered** and cooled below m.p. of (A) by natural cooling,  
a **heat exchanger** or the like to return to a stable suspended condition  
again and reused.